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Workshops on Requirements for Nonattainment Area Plans: Compilation of Presentation (Revised Edition)

(U.S.) Environmental Protection Agency
Research Triangle Park, NC

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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. ABSTRACT

Under the Clean Air Act Amendments of 1977, States must submit revisions to their State Implementation Plans (SIPs) for all areas that are not attaining the national ambient air quality standards. EPA held a series of three two-day workshops to discuss provisions of those Act Amendments that pertain specifically to nonattainment areas.

The objective of the workshops was to outline the criteria for an acceptable 1979 plan. The workshops discussed the major portions of an implementation plan revision and provided guidance on specific items that must be part of the plan. While details of actual preparation of the SIP revision were not discussed, references were made to sources of this information.

This compilation contains the visual aids used by the presenters, followed by textual material supporting the presentations. The material is arranged in the order of presentation. The material is restricted to the requirements for the nonattainment area SIPs.

KEY WORDS AND DOCUMENT ANALYSIS

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WORKSHOPS ON REQUIREMENTS FOR NONATTAINMENT AREA PLANS

--COMPILATION OF PRESENTATIONS--

Revised Edition

U.S. ENVIRONMENTAL PROTECTION AGENCY

Philadelphia, Pa. -- February 28-March 1, 1978

Kansas City, Mo. -- March 6-7, 1978

San Francisco, Cal. -- March 9-10, 1978

April 1978

PREFACE TO REVISED EDITION

Under the Clean Air Act Amendments of 1977, States must submit revisions to their State Implementation Plans (SIPs) for all areas that are not attaining the national ambient air quality standards. The SIP revisions must be submitted by January 1, 1979, and must demonstrate attainment of the national standards by 1982. An extension up to 1987 is available for plan revisions for carbon monoxide and photochemical oxidants if the State demonstrates that attainment by 1982 is not possible with the application of reasonably available control measures. The Act provides economic sanctions for those nonattainment areas that do not have approved plan revisions by July 1, 1979.

EPA held a series of three two-day workshops to outline requirements of the Clean Air Act Amendments of 1977 and specifically discuss the provisions of the Act Amendments that pertain to nonattainment areas. The objective of the workshops was to outline the criteria for an acceptable 1979 plan. The workshops discussed the major portions of an implementation plan revision and provided guidance on specific items that must be part of the plan. The workshops were not designed to cover all the details of preparation of a SIP revision such as how to estimate future emissions and how to model air pollutant concentrations. References were made to sources of this information, however.

The second workshop, held in Kansas City, was videotaped. Edited tapes of this workshop are available through the EPA Regional Offices to further disseminate information concerning the requirements for the 1979 SIP revisions.

This compilation was designed to accompany the workshops and be used as an aid by both the participants and those not able to attend the workshops. The compilation contains the visual aids used by the presenters, followed by textual material supporting the presentations. The material is arranged in the order of presentation. The material is restricted to the requirements for the nonattainment area SIPs.

The actual workshops and the previous edition of this compilation also covered a number of miscellaneous topics concerning requirements for SIP revisions not directly associated with the nonattainment area plans. These requirements are in the formative stages as compared to the material presented in the first day and a half of the workshop and thus contain a number of issues that have not yet been resolved. EPA wanted to provide preliminary ideas concerning those topics and obtain reactions to them. Material on these miscellaneous topics have been deleted from this edition of this compilation and from the videotape of the workshop.

In addition, a number of minor changes have been incorporated into this edition of the compilation to improve the clarity of the material in response to comments.and questions received at the workshops.

The overall goal of the workshops was to provide the State and local governments with a clear understanding of what will be required regarding the 1979 plan submission for nonattainment areas and to assist them in the development of a reasonable program to accomplish the objectives of the 1977 Amendments to attain the national ambient air quality standards as expeditiously as practicable.

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WORKSHOP ON REQUIREMENTS FOR NONATTAINMENT AREA PLANS

DAY 1

TIME	TOPIC	SPEAKER
8:30	Welcome	Regional Administrator
8:40	Opening Remarks	Walter Barber[1] John Hidinger[1]
9:15	Overview of CAA Requirements and Organization of Workshop	Darryl Tyler
9:45	Break	
10:00	Control Strategy and General Plan Requirements	David Dunbar
11:15	Transportation-Related Issues	John Hidinger[2]
12:15	Lunch	
1:15	Emission Inventory	Johnnie Pearson
1:45	Emissions-Air Quality Relationships	David Foster
2:15	Definition of RACT	Johnnie Pearson
2:45	Break	
3:00	Public Participation and Intergovernmental Consultation[3]	John Hidinger
3:30	Day 1 Summation	
3:45	Adjourn	

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[1] Walter Barber and John Hidinger were unable to attend the San Francisco Workshop; Richard Rhoads presented the opening remarks.

[2] Imants Krese presented this topic at the San Francisco Workshop.

[3] This topic was not presented at the San Francisco Workshop.

DAY 2

TIME	TOPIC	SPEAKER
8:30	Reasonable Further Progress	Michael Trutna
9:30	Procedural Requirements	John Silvasi Robert Homiak
10:15	Break	
10:30	New Source Review	Michael Trutna
11:30	Lunch	
12:30	Miscellaneous Topics (detailed below)	
	Tall Stacks	David Dunbar
	Permit Fees	Joseph Sableski
	Assurance of Plan Adequacy	Joseph Sableski
	State Board Composition	John Silvasi
	Interstate Pollution	John Silvasi
	Public Notification	Joseph Sableski
	Maintenance of Pay	Joseph Sableski
	Air Pollution Episode Reporting	Joseph Sableski
	Prevention of Significant Deterioration (Part C)	Michael Trutna
2:00	General Discussion	
2:30	Closing Remarks	
2:40	Adjourn	

SPEAKERS

Walter C. Barber, Director
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and Standards (MD 10)
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(continued)

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Opening Remarks

OPENING REMARKS

PREPARED STATEMENT FROM WALTER BARBER, DIRECTOR

OFFICE OF AIR QUALITY PLANNING AND STANDARDS

Interpreting the Act Requirements

The development of the January 1979 SIPs to meet the requirements of the Clean Air Act Amendments of 1977 is a most complex and demanding task. A literal first reading of the Clean Air Act as Amended August 7, 1977, may lead one to conclude that the task is an impossible one in the time allowed by Congress. Between the passage of the Amendments in August and these Workshops, EPA has devoted much time and energy in trying to establish reasonable and achievable goals for SIP submissions that, at least, meet the intent of Congress. These SIP requirements were developed with the input of many groups from outside the Agency. These groups include State and local air pollution control officials, elected officials, environmental groups, industrial representatives and many others. EPA in cooperation with other groups such as the APCA, STAPPA, and ALAPCO has participated in numerous meetings, forums, and seminars to explain the Amendments and to solicit opinions on how the Congressional mandate imposed by the Amendments could be reasonably met. At the same time that the discussions and debates on the policy issues created by the Act were taking place, the Agency was also conducting meetings, workshops, etc., on the technical tools (air quality modeling, emission factors, control techniques) to be used in developing the SIPs.

This Workshop concludes the initial consultation/discussion/debate process that has been going on since August 7, 1977. That process has been most valuable and in fact absolutely necessary if the Agency was to have any hope of developing achievable goals for the SIP submission. Unfortunately, while this very necessary process was taking place, the clock did not stop ticking away toward the January 1, 1979, SIP submission date. If the States are to meet that date, discussions and debates must now be replaced by hard work toward meeting realistic though difficult goals. It is time for EPA to bite the bullet and spell out the requirements for an acceptable SIP.

SIP Policy Statement

On February 24, 1978, the Administrator issued the "Criteria for Approval of 1979 SIP Submissions." That policy statement summarizes the elements which a 1979 SIP revision for a non-attainment area must contain in order to meet the requirements of Part D of the Clean Air Act and be approved by EPA.

Goal of Workshop

It is the purpose of this series of Workshops to amplify on the Administrator's SIP Criteria Policy Statement. The objective of the workshop will be to outline in significant detail the criteria for an acceptable 1979 plan. The workshops will discuss the major portions of an implementation plan revision and provide guidance on specific items that must be part of the plan. The workshops are not designed to cover all the technical details of preparation of a SIP revision such as how to estimate future emissions or how to model air pollution concentrations. References, however, will be made to acceptable sources of this type of information.

Form of Workshop

It is not our purpose in these Workshops to debate the Clean Air Act and its associated implementation issues; I hope we have already done that. Our purpose is to present the basic SIP requirements in a logical lecture type format. While each presentation will be followed by a question and answer period, the questions should be of a clarifying nature or to gain additional information on how specific requirements can be met in a specific situation. Also, during the question and answer period, we ask that you identify areas where additional technical guidance is needed. While we have made every effort to develop requirements that are achievable with currently available guidance, it is possible that some additional guidance relative to a specific requirement for a given area may need to be developed. As I stated earlier, specific technical guidelines will be referenced in the presentations as well as the handout materials.

Sanctions

It is the intent of the Agency to establish reasonable and achievable requirements for the development of the 1979 SIP submissions. Since we believe we have succeeded in that intent, we feel that we must take a firm posture with regard to the imposition of the Congressionally mandated sanctions where the reasonable requirements are not met. These sanctions include prohibiting construction of major new or modified air pollution sources and discontinuing certain EPA and DOT grants.

107 Designations

It would seem reasonable before we get underway with what is required in a SIP submission, that we take a few minutes to focus on the areas to be covered by the requirements.

On February 23, 1977, the Administrator, after reviewing earlier State submissions, listed those counties or portions thereof that were violating the national ambient air quality standards. SIPs must be developed for each of these areas by January, 1979. Of the 3,215 counties in the U.S.:

607 are listed as non-attainment for O_x
421 are listed as non-attainment for TSP
190 are listed as non-attainment for CO
101 are listed as non-attainment for SO_2, and
8 are listed as non-attainment for NO_2

It is the overall goal of this Workshop to provide the State and local governments with a clear understanding of what will be required in the 1979 SIP in order to attain the standard everywhere.

CONTROL AGENCY RESOURCES

Background

The 1977 Clean Air Act Amendments place upon State and other governmental bodies a responsibility for ensuring that adequate personnel, funding, and authority are available to carry out the SIPs. Federal government resources are provided to these governmental bodies to assist them in their planning activities and operational programs necessary to develop, revise, and carry out these plans. This Federal government program operates through program grant assistance, Federal assignees and special demonstration grant and contract assistance.

Resource Status

In 1977 resources expended by State and local agencies engaged in planning, regulatory and enforcement aspects of the national air pollution control effort totaled approximately 7300 man-years and $174 million. The Federal government contributed approximately $58.5 million or 33.6 percent of the total resources.

Resource Needs

The resources needed to attain and maintain standards have continued to outstrip existing manpower and dollar availability. For example, the growth in positions and man-years in 1977 was less than in any of the three previous years. The average cost of a man-year of effort in 1977 was $23,400 compared to approximately $19,900 in 1975. These statistics reflect inflationary costs of salaries and agency operations that often result in lower agency growth than is needed to fulfill program needs.

Estimation techniques, manpower models, and estimates made by control agencies predict resource needs to accomplish current plans (pre-1977 Amendments) to be in the range of 10,000 man-years and approximately $240 million. With the additional requirements imposed by the Clean Air Act amendments, these predictive estimates will undoubtedly rise even higher. With the shortfall between what is needed compared to available resources, our national resource program has been operated on a priority basis with national program guidance outlining the work to be done. Some jobs remain undone, as reflected in the recent 107 attainment/non-attainment designations. There are still many areas that have not attained the standards.

Current Funding and Future Prospects

Resources are now being channeled into planning for those complex programs set forth by the Amendments. The States will be developing SIPs by January 1, 1979, that will include strategies for the control of all sources, including non-traditional sources such as industrial fugitive emissions and urban reentrainment. In addition, strategies associated with control of transportation sources and growth considerations are required.

To assist the State and local governments in developing these plans, the 1978 control agency appropriation will be increased from $58 million to $66 million. The additional $8 million this year will be used to obtain contractors, in increase grants to control agencies, and to fund metropolitan planning organizations.

In 1979 we have asked Congress to increase agency support money by another $8 million to continue implementation of the plans and by an additional $5 million to assist in the support of inspection/maintenance programs. This will result in a total of approximately $79 million in Federal assistance to States. As a minimum, States are expected to increase their contributions over 1977 funds by approximately $25 million. Even with these increases, there is an estimated $20+ million shortfall for State and local air pollution control agencies. This shortfall will necessitate even further prioritization of the requirements imposed on the State and locals by EPA and a prioritization of the resource allocation within the State and local agencies toward meeting those requirements.

As I mentioned earlier, it has taken EPA from the passage of the Amendments until now to develop SIP requirements that appear to us to be reasonable and attainable. One of the factors that influences us was the known shortfall in resources between what is ideally needed to develop and implement SIPs as well as the other things a control agency is required to do and the resources that are currently available or likely to be available in the near future. We believe that the requirements that will be presented during this Workshop meet the intent of the Act, are reasonable and are attainable with the resources available. I don't mean to leave you with the idea that I think this job is easy; I know it isn't, but I think it is possible.

I would like to pause here and let Jack Hidinger take a few minutes to summarize some of the specific things he and OTLUP have been doing since August 1977 to develop requirements for transportation measures and intergovernmental cooperation and consultation that can be reasonably included in the January 1979 SIP submittals.

Remarks by John O. Hidinger

Director, Office of Transportation
and Land Use Policy

My Office has the responsibility for the following requirements under the 1977 Clean Air Act:

° Develop the Regulations for the State/Local Consultation Process (Section 121)

° Develop the Guidelines and the Regulations for the Designation of a Lead Planning Agency (Section 174)

° Develop the Transportation Planning Process Guidelines (Section 108(e))

° Published the Information Documents on TCP Measures (Section 108(f))

° Develop Policies for Inspection and Maintenance Programs

° Develop Policies for Implementing the Coordination of Sewage Treatment Grants and Air Quality Plans (Section 316)

One of my primary concerns is the relationship between various governmental units in trying to accomplish this complex task of controlling air pollution. I feel that in passing the Clean Air Act Amendments of 1977, Congress recognized the necessity of establishing an approach of shared responsibilities between state and local levels of government. Section 174 specifically requires that in preparing a plan to control oxidants or carbon monoxide a jointly determined division of responsibilities be made by the State and the local elected officials.

This division of responsibilities is especially important in the area of transportation control planning. In this area we have learned through bitter experience that the political process is just as important as the technical process in implementing transportation control measures.

The intial transportation work that we are requiring in order to submit an acceptable SIP in 1979 focuses on establishing the planning process, developing a work program, and forging the intergovernmental relationships that will be necessary to plan and implement an ambitious transportation control plan.

At the same time that this process is being developed, we believe that measures that have been planned either in the SIP or as part of the DOT process that show benefits for air quality should be moved forward for implementation. Evidence of this will be the projects and measures included in the Transportation Improvement Program (TIP) and its Annual Element which is DOT's title for the capital improvement programs.

Walt Barber mentioned the $8 million available for FY 1978. We are going to earmark $2 million of these funds for pass-through to the Metropolitan Planning Organization to aid them in preparing their January 1979 SIP submittal. In addition, FHWA and UMTA have notified their respective Regional Offices that air quality planning is to be considered high priority and funds from these agencies can be reprogrammed to address air quality needs.

Most of you know that $75 million was authorized by Congress to conduct air quality planning under Section 174. OMB did not grant these funds. However, there is some money reserved in a contingency account of the FY 1979 budget pending an agreement between EPA and DOT on how the air quality planning will be merged with the transportation planning.

There is an additional area where you will need to initiate activity, that is, implementation of I/M programs. By January 1, 1979, you must submit as a part of your SIP, the Governor's committment to implement I/M. The Governor would commit to a schedule for the development, adoption, and implementation of an I/M program.

In addition, each State requiring I/M must obtain the necessary legal authority prior to June 30, 1979.

From the experience that I have had over the past 3 1/2 years, one thing is extremely clear, no state or local agency and no politician is going to step right out on this politically sensitive program without a lot of careful consideration and information. Your job is to provide that information and documentation that will illustrate the costs and the benefits of an I/M program in your area. We're going to help you with this work by establishing a contract mechanism that you can use to assist in preparing the I/M studies.

Also the citizens in any affected area have to be introduced to I/M. A citizens information campaign can be initiated now with speeches, slide shows and pamphlets. However, we have found that the most effective device for introducing I/M to the public is to incorporate a demonstration phase into the I/M implementation schedule. The Administration is requesting $5 million in the FY 1979 budget to assist the establishment of I/M programs.

CONTINUATION OF PREPARED STATEMENT
FROM WALTER BARBER

Before I turn the program back to Darryl, I would like to take just a few minutes to express my concern for the difficulty of the task that lies ahead to develop adequate SIPs by January 1979 and to fully implement those SIPs by 1982 or even 1987. I hope you see EPA as working with you in this process. As I stated in my very first remarks, we have taken from August 1977 till now to develop these requirements as we were trying to develop reasonable and achievable goals that still met the intent of Congress. We have not taken the Act and seen how many barriers we could throw before you and try to justify ourselves by citing it as the intent of Congress. We have tried to do quite the opposite. We have tried to develop requirements that overcome barriers and make it as easy as possible to develop SIPs that will meet the intent of Congress. For instance, we will be indicating areas where certain requirements can be met in phases beyond 1979 rather than all at once by January.

I would also like you to realize that EPA isn't going to lay out a series of requirements at these Workshops and then go home to wait and see what you come up with in January. To the limit of our resources, both Headquarters and Regional, we are going to be working with you to complete this task on time. We want to work with you--not make it hard for you.

Between now and January, many tough decisions are going to have to be made. We realize this. We hope you will look at this Workshop as the first in a series of efforts on our part to help you with those tough decisions.

Overview of Clean Air Act Requirements and Organization of Workshop

REQUIREMENTS FOR
PREPARATION,
ADOPTION,
and
SUBMITTAL
OF IMPLEMENTATION PLANS

PLAN CONTENT AND REQUIREMENTS
40 CFR 51 SUBPART B

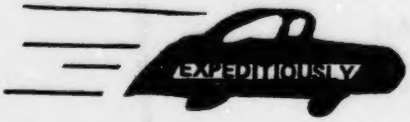
- *LEGAL AUTHORITY
- *CONTROL STRATEGY
- *COMPLIANCE SCHEDULE
- *PREVENTION OF AIR POLLUTION EMERGENCY EPISODES
- *AIR POLLUTION SURVEILLANCE
- *REVIEW OF NEW AND MODIFIED SOURCES
- *SOURCE SURVEILLANCE
- *RESOURCES
- *INTERGOVERNMENTAL COOPERATION
- *RULES AND REGULATIONS

1979
SUBMISSION

PLAN SUBMISSION
JANUARY 1, 1979

APPROVAL DISAPPROVAL
JULY 1, 1979

PLAN MUST DEMONSTRATE
ATTAINMENT AS



EXPEDITIOUSLY

AS PRACTICABLE

Primary Standard

TSP ★ SO_2 ★ NO_2

1982

TSP SO_2

SECONDARY STANDARDS

→ REASONABLE TIME

CO, O_x

UP TO FIVE YEAR

EXTENSION IS PROVIDED

CO, O_x

NO LATER THAN

DEC. 31, 1987

CRITERIA FOR
EXTENSION
OF 1982 DEADLINE FOR CO, O_x

1. MUST HAVE APPLICATION OF ALL REASONABLE CONTROL MEASURES.
2. MUST HAVE A DEMONSTRATION THAT STANDARD CAN NOT BE MET BY 1982.

EXTENSION NOT AUTOMATIC

PLAN REQUIREMENTS FOR NONATTAINMENT AREAS

SECTION 172 (a)

"– – –PROVIDE FOR ATTAINMENT OF EACH NATIONAL AMBIENT AIR QUALITY STANDARD IN EACH SUCH AREA AS EXPEDITIOUSLY AS PRACTICABLE – – –" (CONTROL STRATEGY)

SECTION 172 (b)

"THE PLAN PROVISIONS REQUIRED BY SUBSECTION (a) SHALL – – –"

(1) BE ADOPTED BY STATE (OR PROMULGATED BY THE ADMINISTRATOR) AFTER REASONABLE NOTICE AND PUBLIC HEARING.

(2) PROVIDE FOR IMPLEMENTATION OF ALL REASONABLY AVAILABLE CONTROL MEASURES AS EXPEDITIOUSLY AS PRACTICABLE.

(3) REQUIRE INTERIM REASONABLE FURTHER PROGRESS.

(4) INCLUDE A COMPREHENSIVE, ACCURATE CURRENT INVENTORY OF ACTUAL EMISSIONS FROM ALL SOURCES AND SHOULD BE RESUBMITTED AS FREQUENTLY AS NECESSARY TO ASSURE COMPLIANCE WITH REASONABLE FURTHER PROGRESS PROVISIONS.

(5) EXPRESSLY IDENTIFY AND QUANTIFY EMISSIONS FROM CONSTRUCTION AND OPERATION OF NEW OR MODIFIED SOURCES.

(6) REQUIRE PERMITS FOR CONSTRUCTION AND OPERATION OF NEW OR MODIFIED SOURCES IN ACCORDANCE WITH SECTION 173 (PERMIT REQUIREMENTS.)

(7) IDENTIFY AND COMMIT THE FINANCIAL AND MANPOWER RESOURCES TO CARRY OUT PLAN.

(8) CONTAIN EMISSION LIMITATIONS, SCHEDULES OF COMPLIANCE.

(9) EVIDENCE OF PUBLIC AND LOCAL GOVERNMENTAL INVOLVEMENT AND CONSULTATION.

IDENTIFICATION AND ANALYSIS OF AIR QUALITY, HEALTH WELFARE, ENERGY AND SOCIAL EFFECTS.

SUMMARY OF PUBLIC COMMENT ON ANALYSIS.

(10) WRITTEN EVIDENCE OF STATE, LOCAL GOVERNMENT ETC. HAVE ADOPTED NECESSARY REQUIREMENT TO IMPLEMENT AND ENFORCE PLAN.

(11) MEET CERTAIN REQUIREMENTS IF ATTAINMENT DATE AFTER 1982.

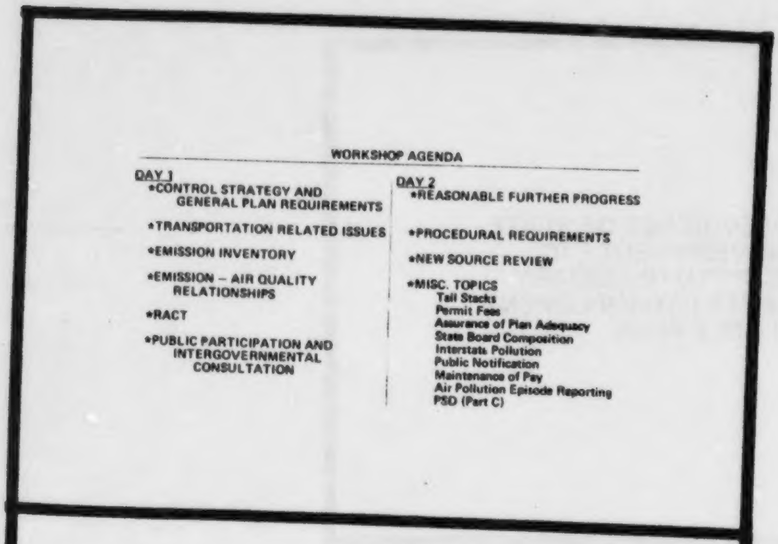
ADDITIONAL NEW SOURCE REVIEW ANALYSIS

SCHEDULE FOR IMPLEMENTING I & M

IDENTIFY OTHER MEASURES NECESSARY TO ATTAIN BY 12–31–87

PLAN REQUIREMENTS

- CONTROL STRATEGY
- ADOPTION AFTER PUBLIC HEARING
- IMPLEMENT RACM
- REASONABLE FURTHER PROGRESS
- EMISSION INVENTORY FOR STRATEGY – DEVELOPMENT AND REASONABLE FURTHER PROGRESS
- QUANTIFICATION OF EMISSIONS FROM NEW OR MODIFIED SOURCES
- PERMITS FOR NEW OR MODIFIED SOURCES
- FINANCIAL AID MANPOWER REQUIREMENTS
- EMISSION LIMITATION, SCHEDULES OF COMPLIANCE
- CONSULTATION
- ANALYSIS OF IMPACT OF PLAN & ALTERNATIVES & COMMENT SUMMARY
- EVIDENCE OF COMMITTMENT TO IMPLEMENT & ENFORCE
- REQUIREMENTS FOR PLANS WITH PROJECTED ATTAINMENT BEYOND 1982



WORKSHOP AGENDA

DAY 1

- *CONTROL STRATEGY AND GENERAL PLAN REQUIREMENTS
- *TRANSPORTATION RELATED ISSUES
- *EMISSION INVENTORY
- *EMISSION – AIR QUALITY RELATIONSHIPS
- *RACT
- *PUBLIC PARTICIPATION AND INTERGOVERNMENTAL CONSULTATION

DAY 2

- *REASONABLE FURTHER PROGRESS
- *PROCEDURAL REQUIREMENTS
- *NEW SOURCE REVIEW
- *MISC. TOPICS
  - Tall Stacks
  - Permit Fees
  - Assurance of Plan Adequacy
  - State Board Composition
  - Interstate Pollution
  - Public Notification
  - Maintenance of Pay
  - Air Pollution Episode Reporting
  - PSD (Part C)

OVERVIEW OF CAA REQUIREMENTS AND ORGANIZATION OF WORKSHOP

I. 40 CFR 51 - Requirements for Preparation, Adoption, and Submittal of Implementation Plans.

Subpart B - Plan Content and Requirements. These requirements were developed pursuant to CAA of 1970 and not altered by CAA Amendments of 1977.

*A. Legal authority - Each plan shall show that the State has the legal authority to carry out the plan.

*B. Control strategy - Each plan shall contain a control strategy that provides for the attainment and maintenance of the applicable air quality standards.

*C. Compliance schedules - Each plan shall contain legally enforceable compliance schedules setting forth the dates by which sources must be in compliance with any applicable requirements of the plan.

D. Prevention of air pollution emergency episodes - Each plan shall include a contingency plan which provides for the taking of emission control actions necessary to prevent ambient pollutant concentrations from reaching levels which could cause significant harm to the health of persons.

E. Air quality surveillance - Each plan shall provide for the establishment of an air quality surveillance system.

*F. Review of new sources and modification - Each plan shall set forth legally enforceable procedures adequate to determine whether the construction or modification of a source will result in violations of applicable portions of the control strategy or will interfere with attainment or maintenance of a national air quality standard.

G. Source surveillance - Each plan shall provide for monitoring the status of compliance with any rules and regulations which set forth any portion of the control strategy.

H. Resources - Each plan shall include a description of the resources available to the State and local agencies to carry out the plan.

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*These requirements will be highlighted during the workshop.

*I. Intergovernmental cooperation - Each plan shall provide for the exchange of information and identification of intergovernmental responsibilities as necessary to develop and implement the plan.

*J. Rules and regulations - Emission limitations and other measures necessary for attainment and maintenance of any national standards shall be adopted as rules and regulations enforceable by the State agency.

II. The Clean Air Act As Amended August 1977

A. Date of Plan Submission -- January 1, 1979

B. EPA Approval/Disapproval - July 1, 1979

C. Plan must demonstrate attainment

1. **As expeditiously as practicable but no later than 12/31/82 for TSP, SO_2, and NO_2 primary standard./**

2. **Reasonable time for TSP and SO_2 secondary standard attainment.**

3. **As expeditiously as practicable but no later than 12/31/87 for CO and O_x**

D. Extensions

1. **Up to a 5-year extension is provided for CO and O_x**
2. **Criteria for extension is:**

   a. **Must have application of all reasonably available control measures (RACM). This includes transportation control measures as well as stationary source control measures.**

   b. Must have a demonstration that attainment of standard is not possible by 12/31/82 through the application of RACM.

3. The granting of extension is not automatic.

   a. A demonstration of need must be made
   b. State must fulfill all other statutory requirements.

III. Clean Air Act of 1977: Part D - Plan Requirements for Non-Attainment Areas (These requirements supplement those presented in 40 CFR 51 Subpart B noted in "I" above.)

A. Sec. 172(a) - "... shall provide for attainment of each such national ambient air quality standard in each area as expeditiously as practicable..." (control strategy)

B. Sec. 172(b) - "The plan provisions required by subsection (a) shall" -

1. be adopted by State (or promulgated by the Administrator) after reasonable notice and public hearing
2. provide for implementation of all reasonably available control measures as expeditiously as practicable.
3. require interim reasonable further progress
4. include a comprehensive, accurate current inventory of actual emissions from all sources and should be resubmitted as frequently as necessary to assure compliance with reasonable further progress provisions.
5. expressly identify and quantify emissions from construction and operation of new or modified sources
6. require permits for construction and operation of new or modified sources in accordance with Sec. 173 (permit requirements)
7. identify and commit the financial and manpower resources to carry out plan
8. contain emission limitations, schedules of compliance
9. evidence of public and local government involvement and consultation
    a. identification and analysis of air quality, health, welfare, economic, energy, and social effects
    b. summary of public comment on analysis
10. written evidence of State, local government, etc. have adopted necessary requirements to implement and enforce plan
11. meet certain additional requirements if attainment date after 1982
    a. additional new source review analysis
    b. schedule for impementing I/M
    c. identify other measures necessary to attain by 12/31/87

IV. Organization of Workshop

A. Control strategy and general plan requirements

This presentation will focus on the development of a control strategy which identifies those measures that must be implemented in order to attain and maintain the air quality standards within the time allocated by the Act. The presentation will also focus on the general SIP requirements that appear in the recent EPA policy statement "Criteria for Approval of 1979 SIP Revisions." This presentation will set the stage for the more detailed dicussions that will follow during the next two days. The specific requirements of Part D of the CAA-1977 included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standard (control strategy)
2. Sec. 173(b)(1)--adoption after public hearing
3. Sec. 172(b)(2)--implement reasonably available control measures (RACM)
4. Sec. 172(b)(7)--financial and manpower requirements
5. Sec. 172(b)(9)--analysis of impact of plan and alternatives considered and a summary of public comments on the analysis
6. Sec. 172(b)(10)-evidence of commitment to implement and enforce the plan
7. Sec. 172(b)(11)-additional requirements for plans with post-1982 attainment dates

B. Transportation Related Issues

This presentation will focus on specific transportation issues that must be considered in the development and implementation of the SIP control strategy. Specific transportation control measures will discussed. The specific CAA-1977 Part D requirements include in this presentation are:

1. Sec. 172(a)--provide for attainment of the standard (control strategy)
2. Sec. 172(b)(2)--implement RACM
3. Sec. 172(b)(9)--analysis of impact of plan and alternatives considered and a summary of public comment of the analysis.
4. Sec. 172(b)(11)-additional requirements for plans with post-1982 attainment dates.

C. Emission Inventory

In order to develop a SIP, the State must have a current comprehensive and accurate emission inventory. The inventory establishes the base from which emissions must be reduced in order to attain the standards. The specific CAA-1977 Part D requirements included in this presentation are:

1. Sec. 172(b)(4)--emission inventory adequate to develop control strategy and meet the requirement of assuring reasonable further progress.
2. Sec. 172(b)(5)--quantification of emissions from new and modified sources.

D. Emissions--Air Quality Relationships

This presentation provides information on how current emissions and air quality data are used to determine the level of control needed to attain the standards. The specific CAA-1977 Part D requirement included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standard (control strategy)
2. Sec. 172(b)(4)--emission inventory adequate to develop control strategy and meet the requirement of assuring reasonable further progress.

E. Reasonably Available Control Technology (RACT)

The Clean Air Act requires that reasonably available control technology (RACT) be used in developing the control strategy and it be used in defining interim reasonable further progress. This presentation will review those factors that should be considered in defining RACT for a particular source and present information on guidance material that is available to assist in making RACT determinations. The specific CAA-1977 Part D requirements included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standard (control strategy)
2. Sec. 172(b)(2)--implement RACM
3. Sec. 172(b)(3)--require in the interim, reasonable further progress
4. Sec. 172(b)(11)-additional requirements for plans with post-1982 attainment dates

F. Public Participation and Intergovernmental Consultation

In the development of a SIP, it is logical that the public be involved and that there be a considerable amount of intergovernmental cooperation. This is particularly true of when developing transportation control measures and measures to control fugitive dust. This presentation will focus on the specific CAA requirements for participation and consultation. The specific CAA-1977 Part D requirements included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standard (control strategy)
2. Sec. 172(b)(9)--evidence of public, local government, and State legislative involvement and consultation in accordance with Sec. 174 (relating to planning procedures)

G. Reasonable Further Progress

The Congress in developing the CAA Amendments of 1977 added the requirement that a SIP must not only demonstrate attainment of the standards as expeditiously as possible but that there must be a significant amount of progress in the early years toward meeting that objective followed by annual progress thereafter. This presentation will outline the requirements for demonstrating the control strategy's ability to provide for reasonable further progress and the annual monitoring of the progress toward meeting that objective. The specific CAA-1977 Part D requirements included in the presentation are:

1. Sec. 172(a)--provide for attainment of the standards (control strategy)
2. Sec. 172(b)(2)--implement RACM
3. Sec. 172(b)(3)--require, in the interim, reasonable further progress
4. Sec. 172(b)(4)--emission inventory adequate to develop control strategy and meet the requirement of assuring reasonable further progress
5. Sec. 172(b)(5)--quantification of emissions from new and modified sources.

H. Procedural Requirements

There are a number of procedural requirements that a SIP must meet. They include the adoption of rules and regulations, the submittal of regulatory development and implementation schedules, the development and submittal of compliance schedules, and the commitment of resources to implement the SIP. This presentation will include a discussion of EPA's realization that not all regulations required by the SIP control strategy can be legally enforceable by the January, 1979, submittal date. This presentation will specify for which pollutants and for which source categories the States may submit schedules in lieu of actual control requirements or adopted measures. The requirement for periodic progress reports on the implementation of these schedules will also be discussed. The specific CAA-1977 Part D requirements included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standards (control strategy)
2. Sec. 172(b)(1)--adoption after public hearing
3. Sec. 172(b)(7)--financial and manpower requirements
4. Sec. 172(b)(8)--emission limitation and compliance schedules necessary to meet the requirements of this section
5. Sec. 172(b)(10)-evidence to commitment to implement and enforce the plan.

I. New Source Review

The CAA-1977 has a number of additional new source review requirements. This presentation will identify those requirements with particular emphasis on how the new requirements fit into existing State NSR programs. The specific CAA-1977 Part D requirements included in this presentation are:

1. Sec. 172(a)--provide for attainment of the standards (control strategy)
2. Sec. 172(b)(3)--require, in the interim, reasonable further progress
3. Sec. 172(b)(5)--quantification of emissions from new and modified sources
4. Sec. 172(b)(6)--permits for new and modified source in accordance with Sec. 173.
5. Sec. 172(b)(11)-additional requirements for plans with post-1982 attainment dates

J. Miscellaneous Requirements

The CAA-1977 contains a number of additional SIP requirements that are not specifically related to the development of control measures that demonstrate attainment of the standards and provide for interim reasonable further progress. These requirements include:

1. Tall stacks
2. Permit fees
3. Assurance of plan adequacy
4. State board composition
5. Interstate pollution
6. Public notification
7. Maintenance of pay
8. Episode reports
9. Prevention of significant deterioration

The final series of short presentations will discuss these requirements. It is felt that these presentations will provide a degree of completeness to the workshop.

Control Strategy and General Plan Requirements

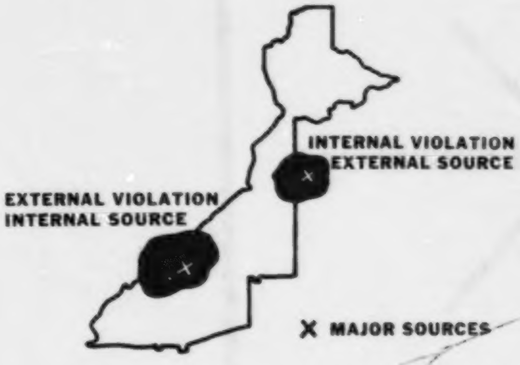
CONTROL STRATEGY DEVELOPMENT
AND
GENERAL REQUIREMENTS FOR APPROVAL OF 1979 PLANS FOR NONATTAINMENT AREAS

GENERAL

PROCEDURES FOR DEVELOPMENT OF A CONTROL STRATEGY

1. CONTROL STRATEGY

MUST BE DEVELOPED
FOR THE AREA WHICH HAS
BEEN DESIGNATED NONATTAINMENT


INTERNAL VIOLATION
EXTERNAL SOURCE
EXTERNAL VIOLATION
INTERNAL SOURCE
X MAJOR SOURCES

APPENDIX A

SIGNIFICANT AIR QUALITY INCREMENTS

FOR NON-ATTAINMENT AREAS

POLLUTANT	AVERAGING TIME				
	ANNUAL	24-HOUR	8-HOUR	3-HOUR	1-HOUR
SO_2	1 $\mu g/m^3$	5 $\mu g/m^3$		25 $\mu g/m^3$	
PM	1 $\mu g/m^3$	5 $\mu g/m^3$			
NO_2	1 $\mu g/m^3$				
CO			0.5 mg/m^3		2 mg/m^3

EACH AREA MUST

HAVE ITS OWN

DEMONSTRATION

~~EXAMPLE REGION CONCEPT~~

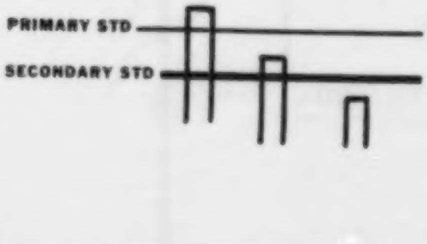
OXIDANT

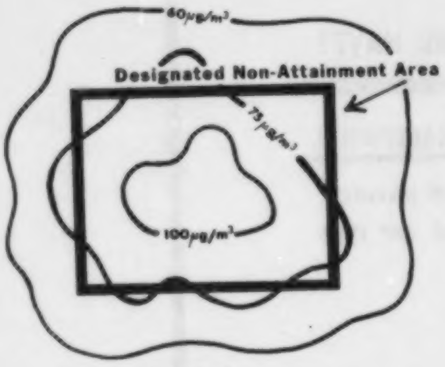
DEMONSTRATION

NO DEMONSTRATION
NECESSARY

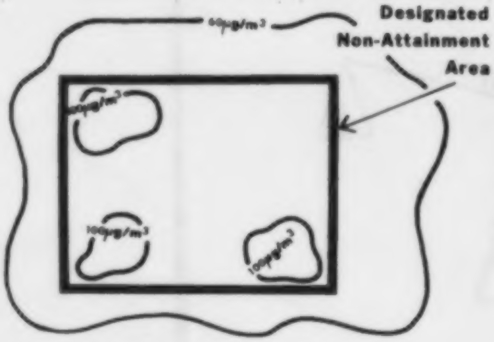
---

2. HOW MUCH
CONTROL WILL BE NEEDED?


PRIMARY STD
SECONDARY STD


60µg/m³
Designated Non-Attainment Area
75µg/m³
100µg/m³

WIDESPREAD


60µg/m³
Designated Non-Attainment Area
100µg/m³
100µg/m³
100µg/m³

Localized

VIOLATIONS

SHORT TERM

ANNUAL

3. WHAT ALTERNATIVES DO YOU HAVE?

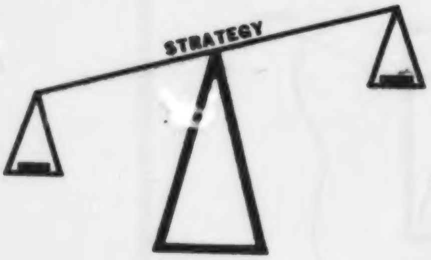
TRADITIONAL

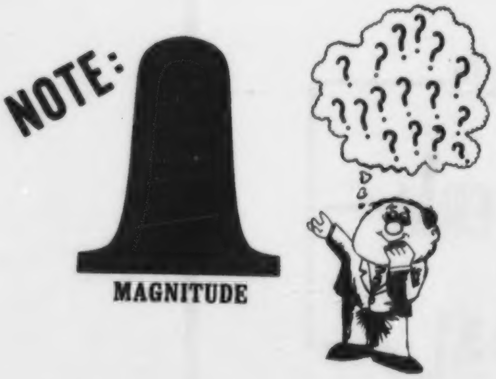
- Retrofit
- Process changes

NONTRADITIONAL

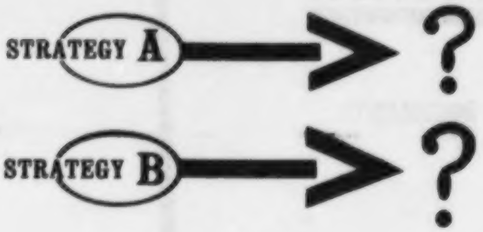
- Road paving
- Land use type

4. SCREENING




NOTE:
MAGNITUDE
? ? ? ? ? ? ? ? ? ? ? ? ? ?

5. EXPECTED REDUCTIONS


STRATEGY A
?
STRATEGY B
?

SUMMARY

of Recommended Emission
Limitations and/or Control Efficiencies
for Stationary VOC Sources

SUMMARY

OF POSSIBLE PERCENT EMISSION
REDUCTIONS FROM RTCMs

PARTICULATES.....

NO SPECIFIC CONTROL
TECHNIQUE GUIDELINE DOCUMENTS

WHERE CAN YOU GET HELP FOR TSP ?

INFORMATION FOR DETERMINING PERCENT CONTROL FOR TSP

- CONTROLLED AND UNCONTROLLED EMISSION RATES AND APPLICABLE LIMITATIONS FOR EIGHTY PROCESSES, SEPTEMBER 1976.
- GUIDELINE FOR DEVELOPMENT OF CONTROL STRATEGIES IN AREAS WITH FUGITIVE DUST PROBLEMS, OAQPS 1.2-071, OCTOBER 1977
- TECHNICAL GUIDANCE FOR CONTROL OF INDUSTRIAL PROCESS FUGITIVE PARTICULATE EMISSIONS, MARCH 1977, EPA 450 / 3-77-010
- SSEIS

WHERE DO YOU
GET HELP FOR

SO_2, NO_x, CO ??

SSEIS

6. STRATEGY SELECTION

IS IT TECHNICALLY ACCEPTABLE ?

- ★ ATTAIN AEAP
- ★ SPECIFIC ATTAIN DATE
- ★ CONTROL TECHNOLOGY ACHIEVABLE
- ★ ENFORCEABLE

IMPACT OF STRATEGY SELECTION

SOCIAL

ENERGY

PUBLIC ACCEPTANCE

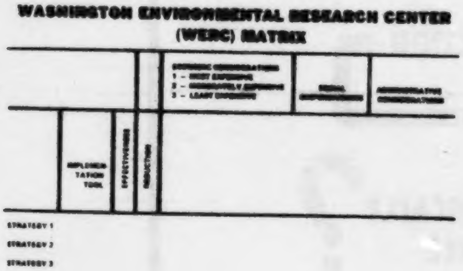
MANPOWER

WELFARE

ECONOMICAL

RESOURCES

INSTITUTIONAL



WASHINGTON ENVIRONMENTAL RESEARCH CENTER (WERC) MATRIX

	IMPLEMENTATION TOOL	EFFECTIVENESS	REDUCTION	ECONOMIC CONSIDERATIONS 1 – MOST EXPENSIVE 2 – MODERATELY EXPENSIVE 3 – LEAST EXPENSIVE	[illegible]	ADMINISTRATIVE CONSIDERATIONS
STRATEGY 1						
STRATEGY 2						
STRATEGY 3						

7. STRATEGY

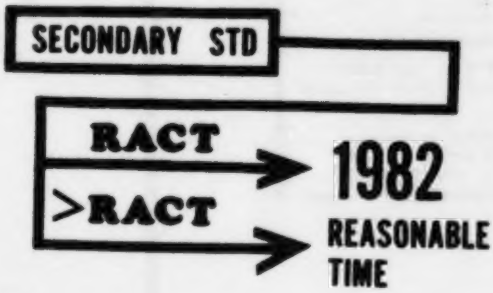
MUST PROVIDE DEMONSTRATION FOR

PRIMARY AND SECONDARY

PRIMARY STANDARD

AEAP

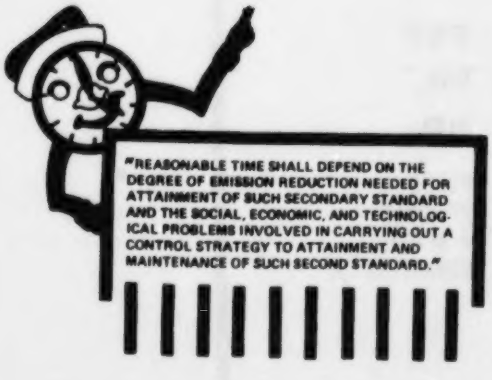
NOT LATER THAN 1982.



SECONDARY STD

RACT → **1982**

>RACT → **REASONABLE TIME**



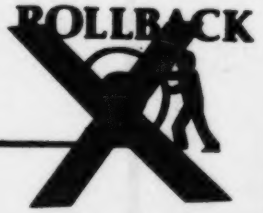
"REASONABLE TIME SHALL DEPEND ON THE DEGREE OF EMISSION REDUCTION NEEDED FOR ATTAINMENT OF SUCH SECONDARY STANDARD AND THE SOCIAL, ECONOMIC, AND TECHNOLOGICAL PROBLEMS INVOLVED IN CARRYING OUT A CONTROL STRATEGY TO ATTAINMENT AND MAINTENANCE OF SUCH SECOND STANDARD."

DEMONSTRATION BASED ON USE OF MODELS

- ● INTERIM GUIDELINE ON AIR QUALITY MODELS OAQPS 1.2 – 080
- ● USES, LIMITATIONS AND TECHNICAL BASIS OF PROCEDURES FOR QUANTIFYING RELATIONSHIPS BETWEEN PHOTOCHEMICAL OXIDANTS AND PRECURSORS EPA 450 / 2-77-021a

FUGITIVE EMISSIONS & FUGITIVE DUST MODELING

- ★ TECHNICAL GUIDANCE FOR CONTROL INDUSTRIAL PROCESS FUGITIVE PARTICULATE EMISSIONS EPA 450 / 3-77-010
- ★ GUIDANCE FOR DEVELOPMENT OF CONTROL STRATEGIES IN AREAS WITH FUGITIVE DUST PROBLEMS OAQPS 1.2-071



TSP

SO_2

NO_X

UNLESS
APPROVED
BY REGIONAL
ADMINISTRATOR

ROLLBACK

Can Be Used For Preliminary Assessment Of Control Strategy Adequacy

- TSP
- SO_2
- NO_x
- CO

Strategy Demonstration For

- O_x

BACKGROUND

THAT PORTION OF MEASURED AMBIENT LEVELS THAT CANNOT BE REDUCED BY CONTROLLING EMISSIONS FROM MAN-MADE SOURCES.

TSP

ANNUAL

- 30-40 $\mu g/m^3$

SHORT TERM

- INTERIM GUIDELINE ON AQ MODELS
  OAQPS 1.2-080

OXIDANT

PROCEDURES FOR QUANTIFYING
RELATIONSHIPS BETWEEN PHOTOCHEMICAL
OXIDANTS AND PRECURSURS

EPA 450/2-77-021B

8. DEVELOP EMISSION LIMITATIONS

9. PUBLIC HEARINGS

10. ADOPTION

11. GOVERNOR'S APPROVAL

12. SUBMITTAL TO UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

General Requirements

FOR APPROVAL OF 1979
PLANS FOR NONATTAINMENT AREAS.

ADOPTION OF LEGAL
ENFORCEABLE PROCEDURES

COMMITTMENT

TO IMPLEMENT
AND
ENFORCE THE PLAN.

SCHEDULES
78
79
80

SCHEDULES MUST CALL FOR

Implementation as expeditiously as practicable

Necessary reduction to maintain reasonable further progress

SCHEDULE MILESTONES
77
78
79
80

ESTIMATE %

OF

CONTROL

NEEDED

REASONABLE

FURTHER

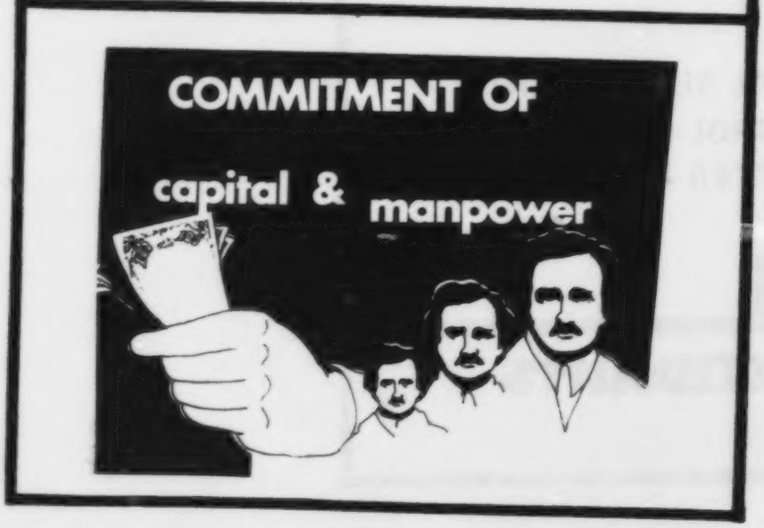
PROGRESS

- ANNUAL REDUCTION
- REDUCTION IN EARLY YEARS
- RECOGNIZE LAG IN IMPLEMENTING REGULATIONS
- CREDITS FOR ACTION SINCE AUG.7, 1977

plan must consider GROWTH

annual report

- progress toward meeting schedules
- emission reductions



COMMITMENT OF

capital & manpower

LOCAL INVOLVEMENT IN PLAN

ANALYSIS OF AIR QUALITY, HEALTH, WELFARE, ECONOMIC, ENERGY, AND SOCIAL IMPACT OF THE PLAN

ADDITIONAL REQUIREMENTS FOR CONTROL STRATEGIES AFTER 1982

CO & OXIDANTS

ANALYSIS OF ALTERNATIVE SITES,
SIZES AND PRODUCTION PROCESSES,
AND ENVIRONMENTAL CONTROL TECHNIQUES
FOR NEW SOURCES WHICH DEMONSTRATE THAT
BENEFITS OUTWEIGH THE ENVIRONMENTAL AND
SOCIAL COST OF A NEW SOURCE LOCATING IN
AN AREA.

INSPECTION
MAINTENANCE

LEGAL
AUTHORITY

JUNE 30, 1979

EXCEPTIONS:

■■■■■■■ no opportunity to
conduct technical analysis

■■■■■■■■ legislature has no
opportunity to consider

LEGAL AUTHORITY
NO LATER THAN 7/1/80

COMMITTMENT TO
PUBLIC TRANSPORTATION

SPECIFIC
REQUIREMENT
for
INDIVIDUAL
POLLUTANTS

★ SO_2

★ Regulations submitted 1979

★ Attainment by 1982

★ NO_x

★ REGULATIONS AND SCHEDULE 1979

★ ATTAINMENT 1982

PARTICULATE MATTER

REGULATIONS FOR TRADITIONAL
.... ALSO INCLUDES FUGITIVE
INDUSTRIAL PROCESS

SCHEDULES FOR NON-TRADITIONAL
★ SOURCES 1979
★ ATTAINMENT 1982

OXIDANT & CO PLAN

REGULATIONS.............STATIONARY SOURCES

SCHEDULES ....STATIONARY SOURCES, TCM

ATTAINMENT DATE 1982/1987

POLLUTANT	ATTAINMENT DATE	1979 SUBMITTAL	
		REGS.	SCHEDULES
SO_2	1982	Yes	No
No_x	1982	Yes	Yes
Particulate Matter	1982	Yes Traditional Source(includes fugitive)	Yes Non-Traditional
O_x	1982/1987	Yes Stationary Source (10 CTG)	Yes 1. later CTG's issued after Jan. 1978 2. I/M 3. TCM 4. other measures
CO	1982/1987	Yes Stationary Source	Yes 1. I/M 2. TCM 3. other measures

OXIDANT

- ★ MAJOR URBAN AREAS
- ★ SIGNIFICANT REDUCTION OF VOC EMISSIONS
- ★ REDUCE PEAK CONCENTRATION IN URBAN AREAS
- ★ SOLVE RURAL OX BY MINIMIZING VOC EMISSION OXIDANTS WHICH MAY BE TRANSPORTED

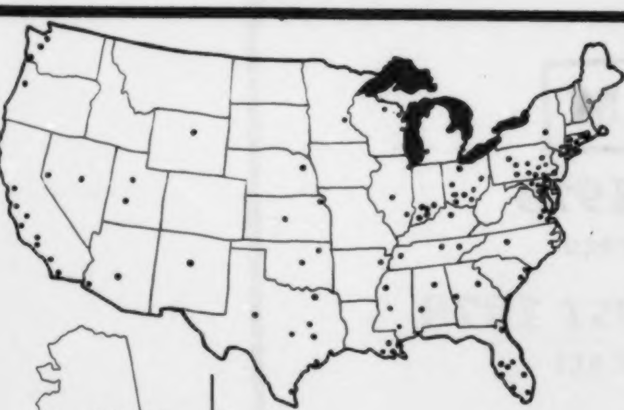
COMPREHENSIVE PLAN

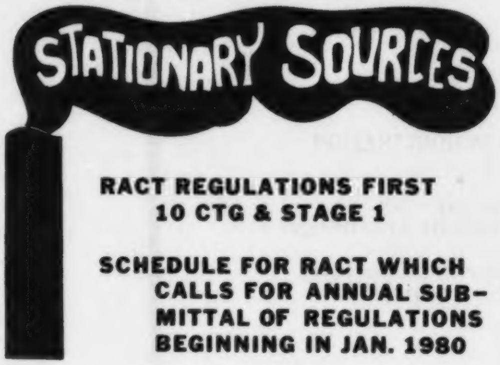
★URBAN AREA PROVIDE DEMONSTRATION OF ATTAINMENT

★RURAL AREA NOT NECESSARY TO PROVIDE DEMONSTRATION OF ATTAINMENT

★RURAL PLAN DEPENDS UPON URBAN PLAN AND RACT ON SOURCES > 100T/YR IN RURAL AREAS

"MAJOR URBAN" GREATER THAN 200,000 IN 1970




STATIONARY SOURCES

RACT REGULATIONS FIRST 10 CTG & STAGE 1

SCHEDULE FOR RACT WHICH CALLS FOR ANNUAL SUBMITTAL OF REGULATIONS BEGINNING IN JAN. 1980

MOBILE
SOURCES

IMPLEMENT REASONABLE TCM's ASAP!

RCTM

- **FEB. 1978**
  5 MEASURES
- **AUGUST 1978**
  14 MEASURES

Transportation Measures

- **PROMPT ANALYSIS**
- **IMPLEMENT IN PHASES IF NECESSARY**
- **IMPLEMENTATION MAY BE COMPLICATED & LENGTHY**

1979 PLAN SUBMITTED WITH EXTENSION BEYOND 1982

★EXPEDITIOUS IMPLEMENTATION OF CURRENT RTCM

★PROGRAM TO EVALUATE RANGE OF ALTERNATIVE PACKAGES

★PROVIDE EVALUATION OF LONG RANGE ALTERNATIVES

★SCHEDULE FOR ANALYSIS AND ADOPTION OF TCM AEAP

PLANS FOR UNCLASSIFIED AREAS FOR OXIDANT

★SUBMIT PLAN WITHIN 9 MONTHS OF NON-ATTAINMENT DETERMINATION

★ATTAINMENT DATE

★OFF SETS UNTIL PLAN DEVELOPED

★FOR RURAL AREAS PREVIOUS SUBMITTAL MAY BE SUFFICIENT

JANUARY 1978
GROUP I CTG ISSUED (10)
STAGE I GUIDANCE ISSUED
GROUP I (5) RTCM GUIDANCE ISSUED
(FEBRUARY 1978)

JULY 1978
GROUP II CTG ISSUED
GROUP II (14) RTCM GUIDANCE ISSUED
(AUGUST, 1978)

JANUARY 1979
SO_2 REGS
TSP REGS (TRADITIONAL)
SCHEDULES (NON TRADITIONAL)
NO_X REGS
SCHEDULES
O_x & CO REGS (STATIONARY)
SCHEDULES I/M
TCM
OTHER MEASURES
GROUP III CTG ISSUED (DEC. 1978)

JULY 1979
PLAN APPROVAL/DISAPPROVAL
LEGAL AUTHORITY I/M (JUNE 30, 1979)
LAST CTG's ISSUED (GROUP IV)

JANUARY 1980
SUBMISSION OF REGS FOR GROUP II & III CTG's (15)
SUBMISSION OF LEGALLY ENFORCEABLE PROCEDURES FOR RTCM CONTINUES AS INDICATED IN THE 1979 SCHEDULES
ANNUAL REPORT ON PROGRESS TOWARD MEETING SCHEDULES

JULY 1980

- LEGAL AUTHORITY I/M (LEGISLATE NO OPPORTUNITY BETWEEN 8/7/77 & 6/30/79)
- ANALYSIS OF ALTERNATIVE TCM SHOULD BE COMPLETED

JANUARY 1981

- REGULATIONS FOR GROUP IV CTG'S
- REPRESENTATIVE LIST OF RTCM IMPLEMENTED ON PILOT OR DEMONSTRATION BASIS
- ANNUAL REPORT ON PROGRESS TOWARD MEETING SCHEDULES

JULY 1981

- CONTINUED SUBMITTAL OF LEGALLY ENFORCEABLE PROCEDURES FOR RTCMs AS MAY HAVE BEEN INDICATED IN 1979 SCHEDULES

JANUARY 1982

- I/M IMPLEMENTED FOR DECENTRALIZED SYSTEM (PRIVATE GARAGE)
- LEGALLY ENFORCEABLE PROCEDURES FOR ALL RTCM TO BE SUBMITTED

JULY 1982

- SUBMISSION OF ALL NECESSARY MEASURES TO PROVIDE FOR ATTAINMENT (CO, O_x) STANDARDS BY NO LATER THAN DECEMBER 31, 1987

DECEMBER 1982

- SO_2, TSP, NO_x STANDARDS ATTAINED
- I/M IMPLEMENTATION FOR CENTRALIZED SYSTEM (STATE)
- RTCM IMPLEMENTED (FULL IMPLEMENTATION FOR SOME OF THE MORE DIFFICULT MEASURES MAY EXTEND BEYOND 1982)
- RACT IMPLEMENTED

CONTROL STRATEGY DEVELOPMENT AND GENERAL REQUIREMENTS FOR APPROVAL OF 1979 PLANS FOR NON-ATTAINMENT AREAS

I. Overview of procedures for Control Strategy Development

A. Area for development

1. Plan shall be developed for each non-attainment area as designated under Section 107.

2. Should include the consideration of sources which may be located outside the non-attainment areas but which have a significant impact (as defined in Appendix A, Interim Guideline on Air Quality Models, OAQPS No. 1.2-080) upon non-attainment area. (see Attachment A)

3. Each non-attainment area must have its own control strategy demonstration. The example region approach (Sec. 51.13) per se will not be accepted. However, a slight variation would be permissible for O_x (i.e., demonstrated urban attainment with additional rural stationary source control will be sufficient and no demonstration of attainment is necessary for rural areas).

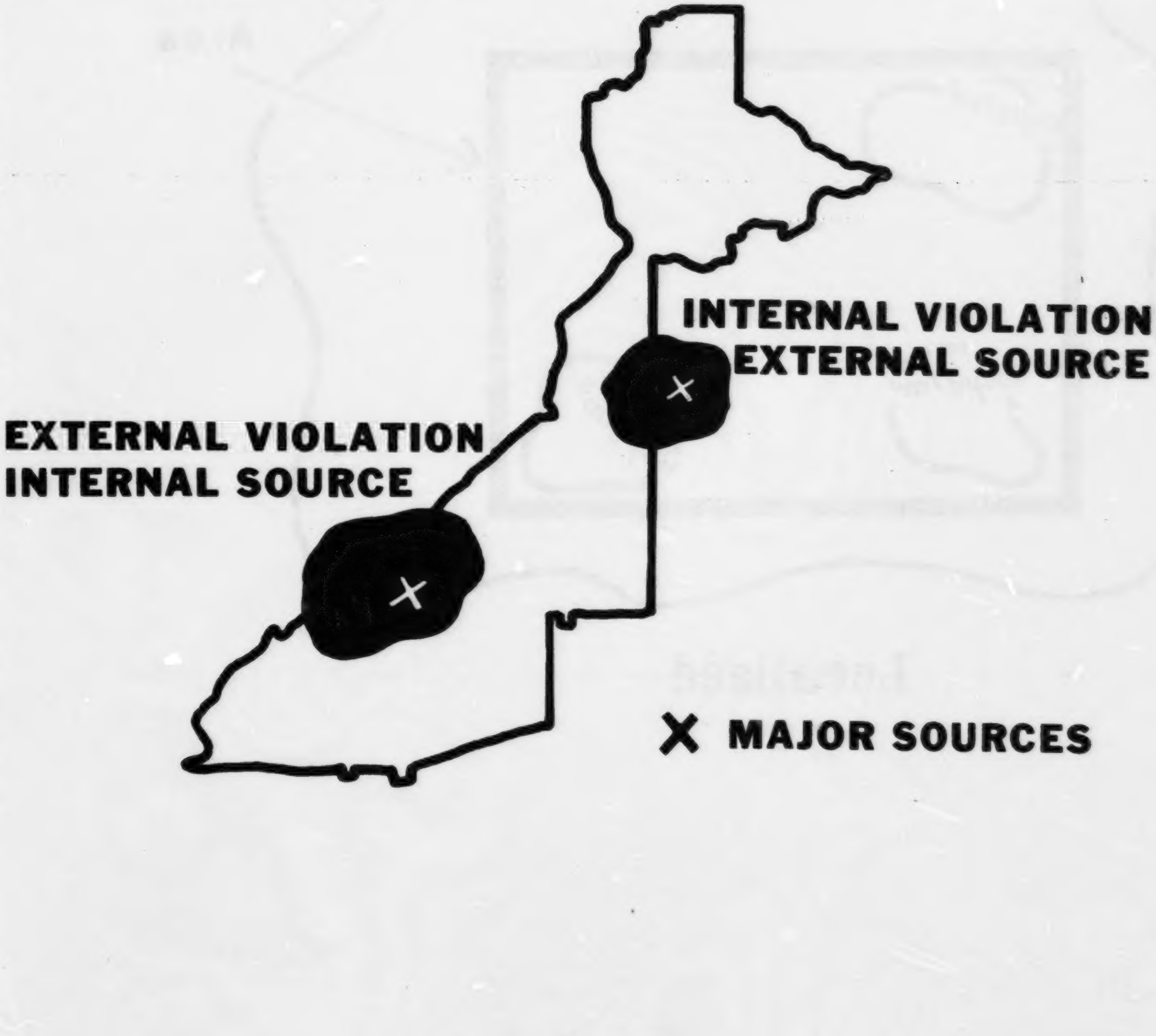
B. What type and how much control is required to attain the standards?

1. The magnitude of the problem
    a. Primary/secondary standard
    b. Maintenance
2. Geographic extent
    a. Localized (see Attachment B)
    b. Widespread (see Attachment C)
3. Temporal

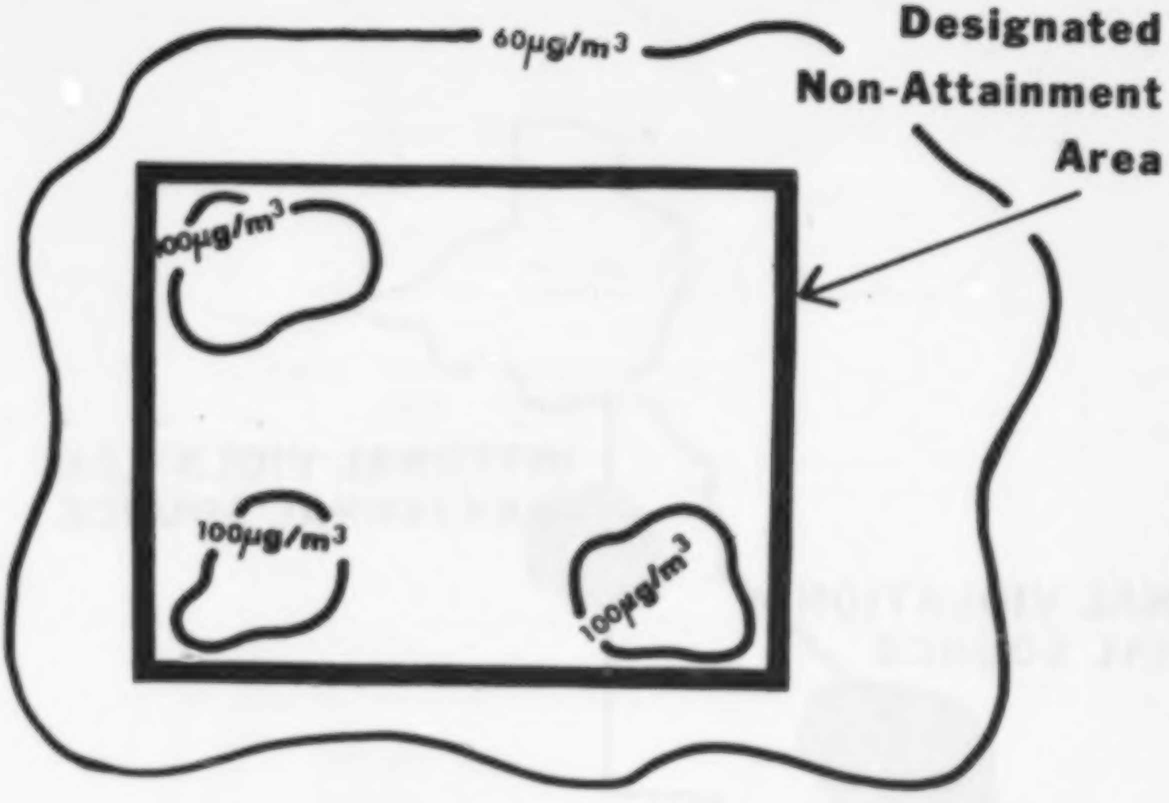
That is, SIP-related limits should be based on concentration estimates for the averaging time which results in the most stringent control requirements. In all cases, these concentration estimates are assumed to be a sum of the concentration contributed by the source and an appropriate background concentration.

If the annual average air quality standard is exceeded by a greater degree (percentage) than standards for other averaging times, the annual average is considered the restrictive standard. In this case the sum of the highest estimated annual average concentration and the annual average background provides the concentration which should be used to specify emission limits. However, if a short-term standard is exceeded by a greater degree and is thus identified as the restrictive standard, other considerations are required because the frequency of occurrence must also be taken into account.

ATTACHMENT A

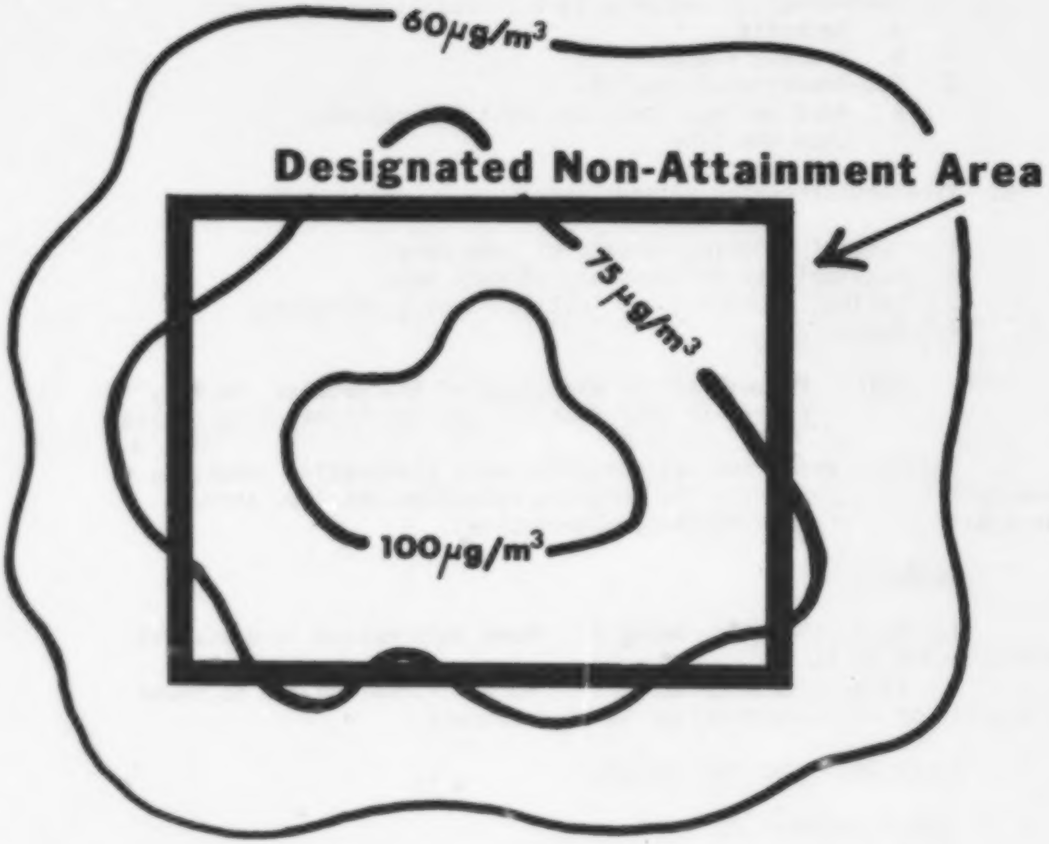

INTERNAL VIOLATION
EXTERNAL SOURCE
EXTERNAL VIOLATION
INTERNAL SOURCE
X MAJOR SOURCES

ATTACHMENT B


60μg/m³
Designated
Non-Attainment
Area
100μg/m³
100μg/m³
100μg/m³

Localized

ATTACHMENT C


60µg/m³
Designated Non-Attainment Area
75 µg/m³
100µg/m³

WIDESPREAD

4. Source categories which constribute to the problem and from which further control is available.
   - a. Stationary
   - b. Mobile

C. Strategy alternatives

1. Technological controls (i.e., traditional sources)
   - a. Retrofit
   - b. Process changes
2. Non-traditional controls
   - a. Road paving, sweeping, dust suppression
   - b. Land use type

D. Strategy screening depends upon:

1. Initial modeling results of base case
2. Availability and accuracy of data base
3. Social, economic, and institutional constraints
4. Resources

NOTE: Because of the magnitude of the problem, in many cases, it will take all you can think of to attain.

E. Emission reduction estimates for each alternative should be developed (i.e., determine the emission reduction obtained through the application of each strategy alternative):

Oxidant

1. RACT--(See Attachment D) (More information is presented in discussion on RACT)
2. RTCM--(See Attachment E) (More information can be found on discussion of Transportation Related Issues)

Total Suspended Particulate

(See Attachment F)

Sulfur Dioxide, Nitrogen Dioxide, Carbon Monoxide

(See Attachment F)

F. Strategy selection

1. Technically acceptable (most important step)
   - a. Provides for attainment as expeditiously as practicable (AEAP)
   - b. Sets forth date of attainment
   - c. AQ projected to attain standard
   - d. Control technology adequate

ATTACHMENT D

Summary of Recommended Emission Limitations and/or Control Efficiences for Stationary VOC Sources

	Emission Limitation or Control Efficiency
GROUP I	
Large Appliance Manufacture	
Magnet Wire Insulation	
Gasoline Bulk Plants	
Metal Furniture Manufacture	
Petroleum Liquid Storage, Fixed Roof Tanks	
Degreasing	
Bulk Gasoline Terminals	
Petroleum Refinery Vacuum Systems, Waste Water Separators and Process Unit Turnaround	
Service Stations, Stage I	
GROUP II	
Petroleum Refinery Fugitive Emissions (leaks)	
Surface Coating of Other Metal Products - Industrial	
Pharmaceutical Manufacture	
Rubber Products Manufacture	
Paint Manufacture	
Vegetable Oil Processing	
Graphic Arts (Printing)	
Flat Wood Products	
Service Stations, Stage II	
Petroleum Liquid Storage Floating Roof Tanks	
GROUP III	
Ship and Barge Transport of Gasoline and Crude Oil	
Organic Chemical Manufacture	
Process Streams	
Fugitive (Leaks)	
Dry Cleaning	
Wood Furniture Manufacture	
Architectural and Miscellaneous Coatings	

ATTACHMENT D (Continued)

Summary of Recommended Emission Limitations and/or Control Efficiencies for Stationary VOC Sources

	Emission Limitation or Control Efficiency
GROUP IV	
Organic Chemical Manufacture	
Waste Disposal	
Storage and Handling	
OTHERS	
Natural Gas and Crude Oil Production	
Adhesives	
Other Induxtrial Surface Coatings	
Auto Refinishing	
Other Solvent Usage	

ATTACHMENT E

SUMMARY OF POSSIBLE
PERCENT EMISSION REDUCTIONS FROM
RTCMs

MEASURES	% Emission Reduction
Inspection/maintenance	
Vapor recovery	
Improved public transit	
Exclusive bus and carpool lanes	
Areawide carpool programs	
Private car restrictions	
Long-range transit improvements	
On-street parking controls	
Park and ride and fringe parking lots	
Pedestrian malls	
Employer programs to encourage car and van polling, mass transit, bicycling and walking	
Bicycle lanes and storage facilities	
Staggered work hours	
Road pricing to discourage single occupancy auto trips	
Controls on extended vehicle idling	
Traffic flow improvements	
Alternative fuels or engines and other fleet vehicle controls	
Other than light duty vehicle retrofit	
Extreme cold start emission reduction programs	

ATTACHMENT F

INFORMATION FOR DETERMINING PERCENT CONTROL FOR TSP, SO_2, NO_x, CO

TSP

-- CONTROLLED AND UNCONTROLLED EMISSION RATES AND APPLICABLE LIMITATIONS FOR EIGHTY PROCESSES, SEPTEMBER 1976.
  - EXTERNAL COMBUSTION
  - SOLID WASTE DISPOSAL
  - FOOD AND AGRICULTURE
  - METALLURIGICAL
  - MINERAL PRODUCTS
  - WOOD PROCESSING

-- GUIDELINE FOR DEVELOPMENT OF CONTROL STRATEGIES IN AREAS WITH FUGITIVE DUST PROBLEMS, OAQPS # 1.2-071, OCTOBER 1977
  - UNPAVED ROADS
  - ENTRAINED STREET DUST
  - CONTRUCTION AND DEMOLITION
  - AGRICULTURE
  - TAILING PILES
  - PARKING LOTS

-- TECHNICAL GUIDANCE FOR CONTROL OF INDUSTRIAL PROCESS FUGITIVE PARTICULATE EMISSIONS, MARCH 1977, EPA 450/3-77-010
  - COMMON DUST SOURCES
  - IRON AND STEEL PRODUCTION
  - PRIMARY NON-FERROUS SMELTING
  - SECONDARY NON-FERROUS SMELTING
  - FOUNDRIES
  - MATERIALS EXTRACTION AND BENEFICIATION
  - GRAIN ELEVATORS
  - PORTLAND CEMENT
  - LIME
  - CONCRETE BATCHING
  - ASPHALT CONCRETE PRODUCTION
  - LUMBER AND FURNITURE

ISP (CONTINUED)

-- SSEIS's FOR NEW SOURCE PERFORMANCE STANDARD DEVELOPMENT

SO_2, NO_x, CO

-- SSEIS's FOR NEW SOURCE PERFORMANCE STANDARD DEVELOPMENT

2. Economic analysis
3. Institutional impact
    a. Local government
    b. MPO's
    c. Social impact--public acceptance
    d. Financial and manpower commitments to carry out the strategy
    e. Welfare, energy impact

NOTE: Might use decision matrix similar to Washington Environmental Research Center matrix. (See Attachment G)

G. Demonstration of attainment

1. Plan must demonstrate attainment
    a. AEAP but no later than 12/31/82 for TSP, SO_2, NO_x primary standard
    b. Reasonable time for TSP, SO_2 secondary standard attainment
        (1) Reasonable time shall be 1982 if only RACT is needed to attain secondary standard
        (2) Where greater than RACT is required or where the State shows that good cause exists for a longer period of time "reasonable time" shall depend on the degree of emission reduction needed for attainment of such secondary standard and on the social, economic, and technological problems involved in carrying out a control strategy adequate for attainment and maintenance of such secondary standard (Sec. 51.13).
    c. AEAP but no later than 12/31/87 for CO, O_x
2. Same models as used for determination of level of control
    a. "Interim Guideline on Air Quality Models" OAQPS 1.2-080
        (1) Multi-Source Models for Sulfur Dioxide and Particulate Matter (Annual Average)--"If a preliminary assessment of the adequacy of a control strategy is desired, the Rollback Model may be used. However, in most cases such a screening does not constitute an adequate control strategy demonstration.

The Climatological Dispersion Model (CDM, the Air Quality Display Model (AQDM), and the Texas Climatological Model (TCM) are recommended for evaluating the long-term impact of urban multi-source complexes. If the meteorological or topographic complexities are such that the use of any available air quality model is precluded, an attempt should be made to acquire or improve the necessary data bases and to develop appropriate analytical techniques.

(2) Multi-Source Models for Sulfur Dioxide and Particulate Matter (Short-term Averages)--Again, a Rollback Model may be used for the preliminary assessment of a control strategy. The Real-Time Air Quality Simulation Model (RAM) is recommended for evaluating the impact of multi-source complexes on air quality averaged over short-term periods. It is applicable to both urban and rural

ATTACHMENT G

Washington Environmental Research Center (WERC) Matrix

				ECONOMIC CONSIDERATIONS 1 - Most Expensive 2 - Moderately Expensive 3 - Least Expensive												Social Responsiveness					Administrative Considerations					
				Direct Costs				Admin. Costs				Social Costs									Control Application					
	Implementation Tool	% Effectiveness	% Reduction	To Polluter	To Consumer	To Government	Other	Program Mgmt.	Enforcement	Monitoring	Other	Area Income	Area Employment	Regional Prices	Other	Most Acceptable	.	.	.	Least Acceptable	Flex. 1-Most 2. - 3-Least	Legal Precedent Exists Y-yes N-No	Continuous	Noncontinuous	Selective	Uniform
Strategy 1																										
Strategy 2																										
Strategy 3																										

situations. The Texas Episodic Model (TEM) may be used if the data bases required to apply RAM are unavailable. Also, if the resources required to operate RAM or TEM are not available, then CDM, AQDM, or TCM may be used to estimate short-term concentrations of SO_2 and particulate matter. CDM and AQDM incorporate procedures, such as that discussed by Larsen, to convert 3-hour and 24-hour average concentrations from annual average concentration estimates. Such statistical techniques are valid only in urban, multi-source areas and should not be used in situations dominated by large point sources.

(3) Models for Carbon Monoxide--The models, procedures, and requirements described in Volume 9 of the Guidelines for Air Quality Maintenance Planning and Analysis, "Guidelines for Review of the Impact of Indirect Sources on Ambient Air Quality," are recommended for screening all sources of CO which fulfill the definition of an indirect source. The indirect source guideline is based on the use of HIWAY and other simple dispersion techniques. It is acceptable to apply these latter techniques, e.g., HIWAY, independently of the indirect source guideline if it is found that the guideline does not adequately consider a wide enough set of circumstances. If a preliminary assessment of the adequacy of a control strategy applicable to an urban area is desired, the Rollback Model may be used.

Situations that require more refined techniques should be considered on a case-by-case basis with the use of expert consultation. If a suitable model is available and the data and technical competence required for this model are available, it may be used. An example of such a refined technique is APRAC-1A. However, if a region-wide analysis is necessary and the complexities are such that the use of any available air quality model is precluded, an attempt should be made to acquire or improve the necessary data bases and to develop appropriate analytical techniques.

(4) Models for Nitrogen Dioxide--The recommendations for point source screening techniques and model are also applicable to evaluate point sources of nitrogen oxides (NO_x) under limited circumstances. The circumstances require an assumption that all NO_x is emitted in the form of NO_2 or is converted to NO_2 by the time it reaches the ground and that NO_2 is a nonreactive pollutant.

For sources located where atmospheric photochemical reactions are significant, a Rollback Model may be used as a preliminary assessment to evaluate the control strategies for multiple sources (mobile and stationary) of NO_x. Another acceptable screening technique for multiple sources is to make an assumption similar to that required for point sources and then to use a model for nonreactive pollutants, such as CDM.

b. "Uses, Limitations, and Technical Basis of Procedures for Quantifying Relationships between Photochemical Oxidants and Precursers" EPA 450/2-77-021a.

c. "Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions," March, 1977, EPA.

(1) "Estimation of the long-term, area-wide air quality impact--No long-term dispersion model is generally available which adequately considers the complicating factors peculiar to Industrial Process Fugitive Particulate Emissions. The possible development of such a model for industrial source complexes is being investigated. In the interim, the absence of an adequate annual model is not critical, since the short-term localized impact of IPFPE's is of primary concern from the viewpoint of development adequate emission control strategies.

Preliminary estimates of area-wide, annual-average impact can be obtained by including the IPFPE sources in the multisource urban models, e.g., CDM and AQDM, which are being used for other sources of particulate matter in the area of concern. For such purposes, the details of source configuration are not so critical as they are for short-term, localized, air quality modeling. On the distance scales of area-wide models, many area sources (e.g., haul roads and roof monitors) can be treated as point sources. The roadway network of a relatively large plant can be treated as a uniform area source. A related aspect is that many emissions can be "lumped" because the physical parameters of the individual sources are not so critical as they are in short-term, localized air quality modeling."

(2) Multi-source (complex) short-term model under development, Summer, 1978.

d. "Guideline for Development of Control Strategies in Areas with Fugitive Dust Problems," OAQPS 1.2-071.--"In those areas where fugitive dust sources predominate, such as in the west and the arid southwest (e.g., Phoenix, Las Vegas, etc.) AQDM and CDM are of limited value; other models such as atmospheric transport and diffusion, ATM, and Hanna Gifford may be adapted for these areas.

At the present time, the consideration of fugitive dust sources in diffusion models is limited. Continued use of AQDM and CDM appears to be the most reasonable approach for those areas where particles less than 10 micrometers predominate. Other techniques may be more useful in those areas where larger sized particles are common.

2. No rollback for TSP, SO$_2$, NO$_x$, unless approved by RA

3. Background concentration--that portion of measured ambient levels that cannot be reduced by controlling emissions from man-made sources

a. TSP--measure ambient level of particulate matter in non-urban areas:

Annual: Background Air Quality--To adequately assess the significance of the air quality impact of a source, background concentrations must be considered. Background air quality relevant to a given source includes those pollutant concentrations due to natural sources and distant, unidentified man-made sources. For example, it is commonly assumed that the annual mean background concentration of particulate matter is 30-40 $\mu g/m^3$ over much of the Eastern United States. Typically, air quality data are used to establish background concentrations in the vicinity of the source under consideration. However, where the source is not isolated, it may be necessary to use a multi-source model to establish the impact of all other nearby sources during dispersion conditions conducive to high concentrations.

If the point source is truly isolated and not affected by other readily identified man-made sources, two options for determining background concentrations from air quality data are available. The preferable option is to use air quality data collected in the vicinity of the source to determine mean background concentrations for the averaging times of interest when the point source itself is not impacting on the monitor. The second option applies when no monitors are located in the vicinity of the source. In that case, average measured concentrations from a "regional" site can be used to establish a back-

Short-term: Background Air Quality--For shorter averaging times, background concentrations are determined by the following procedure. First, meteorological conditions are identified for the day and similar days when the highest, second-highest estimated concentration due to the source occurs. Then the average background concentration on days with similar meteorological conditions is determined from air quality measurements. The background for each hour is assumed to be an average of hourly concentrations measures at sites outside of a 90° sector downwind of the source. The 1-hour concentrations are then averaged to obtain the background concentration for the averaging time of concern.

If air quality data from a local monitoring network are not available, then monitored data from a "regional" site may be used for the second option. Such a site should characterize air quality across a broad area, including that in which the source is located. The technique of characterizing meteorological conditions and determining associated background concentrations can then be employed.

Reference: "Interim Guideline on Air Quality Modeling" OAQPS 1.2-080 p34.

b. Oxidant--"Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursers" EPA 450/2-77-021B

H. Development of emission limitation or legally enforceable procedures of schedules of commitments for the development and adoption of legally enforceable procedures.

I. Public hearings

J. Adoption

K. Governor's approval

L. Submittal to EPA

II. General requirements for approval of 1979 plans for non-attainment areas

A. Adoption of rules and regulations in legally enforceable form of all measures necessary for attainment (See discussion on Procedural Requirements for more information)

B. Commitment to implement and enforce

1. Written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance or other legally enforceable document, the necessary requirement and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan.

C. Schedules

1. Where adoption by 1979 not possible, (e.g., certain transportation control measures and certain measures to control NO_x and TSP) a schedule for expeditious development, adoption, submittal, and implementation of these revisions would be acceptable.
2. Schedules provide implementation AEAP
3. Prior to attainment, measures must be implemented rapidly enough to provide the emission reductions necessary to maintain reasonable further progress. (See discussion on Reasonable Further Progress.)
4. Schedule would be part of applicable plan and represent commitments on part of the State to meet key milestones set forth in schedule. (See discussion on Procedural Requirements.)

D. Emission reductions estimates

1. Each adopted or scheduled control measure or for related group of measures where estimates of individual measures are impractical.
2. Recognized estimates may change as measures are more fully analyzed and implemented.
3. As estimates change, these should be reported and included in subsequent plan submissions to insure plan remains adequate.

E. Reasonable further progress toward primary and secondary standard

1. Annual incremental reduction in total emissions (new, as well as existing).
2. Substantial reductions in early years
3. Recognize some measures cannot be immediately implemented
    a. State shows lag in reductions is necessary
    b. Acceptable even though reductions for RFP are not achieved for a year or two
4. Credit for:
    a. SIP revisions that have been submitted after 8/7/77
    b. Compliance after 8/7/77 with regs already approved (within year 1979) "Not paper trades"

F. Identification and quantification of growth from new sources

1. New source can be accommodated with SIP
2. Offsets

(See discussion on New Source Review)

G. Annual reporting

1. Progress toward meeting commitment schedules for submission of legally enforceable procedures
2. Emissions

H. Identification and commitment to financial and manpower resources

1. Written evidence that agencies have included provisions in respective budgets

I. Evidence of public, local agency involvement and consultation

J. Analysis of air quality, health, welfare, economic, energy, and social effects of plan and alternatives considered

III. Additional requirements for control strategies with attainment after 1982

A. Analysis of alternative sites, sizes, production process, and environmental control technique for new sources which demonstrates benefits outweigh environmental and social costs

B. Inspection/maintenance

1. Legal authority--6/30/79
    a. Exceptions--demonstrate that:
        (1) Insufficient opportunity to conduct technical analysis
        (2) Legislature no opportunity to consider enabling legislation between 8/7/77 & 6/30/79--Legal authority--7/1/80

2. Implementation - AEAP

a. Mandatory inspection/maintenance and mandating repair no later than 1982 for centralized and 1981 for decentralized systems.

C. Commitment to establish, expand, or improve public transportation measures for O_x reduction

D. Commitment to use available transit funds as may be necessary

IV. Sulfur Dioxide Plan Requirements

A. Regulations submittal 1979

B. 1982 attainment

V. Nitrogen Oxide Plan Requirements

A. Regulations and schedules in 1979

B. 1982 attainment

VI. Particulate Matter Plan Requirements

A. Attainment by 1982

B. Regulations for control of traditional and fugitive emission sources

C. Schedules for non-traditional sources (including demonstrate projects)

1. Fugitive dust

a. Guideline for Development of Control Strategy in Areas with Fugitive Dust Problems, OAQPS 1.2-071 pp 6-1 to 6-10

VII. Oxidant and CO Plan Requirements

A. Complete O_x monitoring in major urban areas to characterize problem and require CO monitor if necessary to correct deficiencies

B. Set forth necessary emission limitations. Obtain significant control of VOC emissions in all non-attainment areas.

C. Reducing peak concentrations within major urban areas

1. Solve rural oxidant by minimizing VOC emissions and oxidant that may be transported

D. Assume O_x standard will be attained in adjacent States not part of a given interstate non-attainment area.

E. Comprehensive plan

1. Urban plan must provide for demonstration of attainment of the standard

2. Rural area, no standard attainment demonstration is required per se as the plan for rural areas depends upon the urban demonstration plus RACT for all sources >100 tons/year potential in rural area

3. Rural areas may, however, submit a plan which provides for a demonstration if desired.

F. Major urban areas

1. Urbanized population >200,000 (U.S. Census, 1970) (See Attachment H)

2. Flexible boundary
    a. Entire urbanized area
    b. Adjacent fringe areas

G. Stationary source control

1. January 1, 1979, submittal

a. Legally enforceable regulations for first 10 CTG and Stage I guidance that was issued by January 1978.

b. Provide a schedule which calls for adoption and submittal of RACT on annual basis beginning in January 1980, for CTG's published by January of preceeding year.

(See Attachment I)

H. Mobile sources
1. AEAP implementation
2. Reasonable TCM's
    a. Information available by February 1978
        (1) Inspection/maintenance
        (2) Vapor recovery
        (3) Improved public transit
        (4) Exclusive bus and carpool lanes
        (5) Areawide carpool programs
    b. Information available by August 1978
        (1) Private car restrictions
        (2) Long range transit improvements
        (3) On street parking controls
        (4) Park and ride and fringe parking lots
        (5) Pedestrian malls
        (6) Employer programs to encourage car and van pooling, mass transit, bicycling, and walking
        (7) Bicycle lanes and storage facilities
        (8) Staggered work hours
        (9) Road pricing to discourage single occupancy auto trips
        (10) Controls on extended vehicle idling
        (11) Traffic flow improvement
        (12) Alternative fuels or engines and other fleet vehicle controls

ATTACHMENT H

Urbanized Areas with Population Greater than 200,000

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POPULATION RANKING	URBANIZED AREA	1970 POPULATION
1.	New York, New York-Northeastern N.J.	16,206,841
2.	Los Angeles-Long Beach, CA	8,351,266
3.	Chicago, IL-Northwestern, IN	6,714,578
4.	Philadelphia, PA-NJ	4,021,066
5.	Detroit, MI	3,970,584
6.	San Francisco-Oakland, CA	2,987,850
7.	Boston, MA	2,652,575
8.	Washington,DC-MD-VA	2,481,489
9.	Cleveland, OH	1,959,880
10.	St. Louis, MO-IL	1,882,944
11.	Pittsburgh, PA	1,846,042
12.	Minnesota-St. Paul,MN	1,704,423
13.	Houston, TX	1,677.863
14.	Baltimore, MD	1,579,781
15.	Dallas, TX	1,338,664
16.	Milwaukee, WI	1,252,457
17.	Seattle-Everett, WA	1,238,107
18.	Miami, FL	1,219,661
19.	San Diego, CA	1,198,323
20.	Atlanta, GA	1,172,778
21.	Cincinnati,OH-KY	1,110,514
22.	Kansas City, MO-KS	1,101,787
23.	Buffalo, NY	1,086,594
24.	Denver, CO	1,047,311
25.	San Jose, CA	1,025,273
26.	New Orleans, LA	961,728
27.	Phoenix, AZ	863,357
28.	Portland,OR-WA	824,926
29.	Indianapolis, IN	820,259
30.	Providence-Pawtucket-Warwick, RI-MA	795,311
31.	Columbus, OH	790,019
32.	San Antonio, TX	772,513
33.	Louisville,KY-IN	739,396
34.	Dayton, OH	685,942
35.	Fort Worth, TX	676,944
36.	Norfolk-Portsmouth, VA	668,259
37.	Memphis, TN-MS	663,976
38.	Sacramento, CA	633,732
39.	Fort Lauderdale-Hollywood, FL	613,797
40.	Rochester, NY[a]	601,361
41.	San Bernardino-Riverside, CA	583,597
42.	Oklahoma City, OK	579,788
43.	Birmingham, AL	558,099
44.	Akron, OH	542,775
45.	Jacksonville, FL	529,585
46.	Springfield-Chicopee-Holyoke, MA-CT	514,308
47.	St. Petersburg, FL	495,159
48.	Omaha, NE-IA	491,776
49.	Toledo, OH-MI	487,789
50.	Albany-Schenectady-Troy, NY	486,525
51.	Salt Lake City, UT	479,342
52.	Hartford, CT.	465,001
53.	Nashville-Davidson, TN	448,444
*54.	Honolulu, HI	442,397
55.	Richmond, VA	416,563
56.	Bridgeport, CT	413,366
57.	Youngstown-Warren, OH	395,540
58.	Syracuse, NY	376,169
59.	Tulsa, OK	371,499
60.	Wilmington, DE-NJ	371,267

*Has not been designated non-attainment

ATTACHMENT H (Continued)

Urbanized Areas with Population Greater than 200,000

POPULATION RANKING	URBANIZED AREA	1970 POPULATION
61.	Tampa, FL	368,742
62.	Allentown-Bethlehem-Easton, PA-NJ	363,517
63.	Grand Rapids, MI	352,703
64.	New Haven, CT	348,341
65.	El Paso, TX	337,471
66.	Tacoma, WA	332,521
67.	Flint, MI	330,128
68.	Orlando, FL	305,479
69.	Wichita, KS	302,334
70.	Albuquerque, NM	297,451
71.	Tucson, AZ	294,184
72.	South Bend, IN-MI	288,572
73.	West Palm Beach, FL	287,561
74.	Charlotte, NC	279,530
75.	Trenton, NJ-PA	274,148
76.	Newport News-Hampton,VA	268,263
77.	Davenport-Rock Island-Moline, IA-IL	266,119
78.	Austin, TX	264,499
79.	Fresno, CA	262,908
80.	Mobile, AL	257,816
81.	Des Moines, IA	255,824
82.	Baton Rouge, LA	249,463
83.	Worcester, MA	247,416
84.	Peoria, IL	247,121
85.	Oxnard-Ventura-Thousand Oaks, CA	244,653
86.	Canton, OH	244,279
87.	Columbia, SC	241,781
88.	Harrisburg, PA	240,751
89.	Las Vegas, NV	236,681
90.	Shreveport, LA	234,564
91.	Aurora-Elgin, IL	232,917
*92.	Spokane, WA	229,620
93.	Lansing, MI	229,518
94.	Charleston, SC	228,399
95.	Fort Wayne, IN	225,184
96.	Chattanooga,TN-GA	223,580
97.	Wilkes-Barre,PA	222,830
98.	Little Rock-North Little Rock, AR	222,616
99.	Corpus Christi, TX	208,616
100.	Columbus,GA-AL	208,616
101.	Rockford, IL	206,084
102.	Madison, WI	205,457
103.	Colorado Springs, CO	204,766
104.	Scranton, PA	204,205
105.	Lawrence-Haverhill,MA-NH	200,280

*Has not been designated non-attainment.

ATTACHMENT I

POLLUTANT	ATTAINMENT DATE	1979 SUBMITTAL	
		REGS.	SCHEDULES
SO_2	1982	Yes	No
No_x	1982	Yes	Yes
Particulate Matter	1982	Yes Traditional Source(includes fugitive)	Yes Non-Traditional
O_x	1982/1987	Yes Stationary Source (10 CTG)	Yes 1. later CTG's issued after Jan. 1978 2. I/M 3. TCM 4. other measures
CO	1982/1987	Yes Stationary Sources	Yes 1. I/M 2. TCM 3. other measures

(13) Retrofit on other than light duty vehicle

(14) Extreme cold start emission reduction programs

3. Prompt analysis

a. If analysis demonstrates that certain measures would be unnecessary or ineffective, a decision not to implement such measures may be justifiable.

b. Decisions not to implement measures should be carefully reviewed to avoid broad rejections of measures based on preliminary assertions of infeasibility

4. Implementation activities must proceed

a. Not all should wait until the comprehensive analysis of control measures are completed

b. Demonstration studies are important and should accompany or precede full scale implementation of the comprehensive strategy.

c. Each area should be required to schedule a representative selection of reasonable transportation measures (as listed above) for implementation at least on a pilot or demonstration basis prior to the end of 1980.

5. Implementation of TCM can be complicated and lengthy

a. Very extensive TCM implementation in areas with severe carbon monoxide and oxidant problems, may call for completion of some of the adopted measures beyond 1982.

b. Implementation of even these very extensive transportation measures, however, must be initiated before 12/31/82.

6. 1979 plan revision submittals that justify extension beyond 1982 should:

a. Contain procedures and criteria by which a determination can be made whether the outputs of DOT transportation plan process conform to the SIP.

b. Provide for the expeditious implementation of currently planned reasonable transportation control measures. This includes reasonable but unimplemented transportation measures in existing SIPs and transportation controls with demonstrable air quality benefits developed as part of the transportation process funded by DOT.

c. Present a program for evaluting a range of alternative packages of transportation options that includes, as a minimum, those measures listed above for which EPA will develop information packages. The analysis must identify an optimum package of transportation control measures to attain the emission reduction target ascribed to it in the SIP.

d. Provide for the evaluation of long range (post-1982) transportation and growth policies.

e. Include a schedule for analysis and adoption of transportation control measures as expeditiously as practicable.

(1) The comprehensive analysis of alternatives should be completed by July 1980 unless the designated planning agency can demonstrate that analysis of individual components (e.g., long range transit improvements) may require additional time.

(2) Adopted measures must be implemented as expeditiously as practicable and on a continuous schedule that demonstrates reasonable further progress unless it can be demonstrated that a longer time for implementation is required for individual control measures.

(3) Determinations of the reasonableness of a schedule will be based on the nature of the existing or planned transportation system and the complexity of implementation of an individual measure

VIII. SIPs for unclassified areas redesignated non-attainment

A. Unclassified areas which are later found to be non-attainment areas, the State will be required to submit a plan within nine months of the non-attainment determination which provides for attainment.

B. During plan development, the State will be required to implement the offset policy for that area.

C. Because of previous plan revisions or adoption of previous control regulations, the baseline for offsets will be more restrictive and thus offsets may be more difficult to obtain.

D. Statewide regulatory development (for at least all sources greater than 100 tons/year), however, would permit the State to utilize the regulations developed for the entire State as the applicable plan for the newly designated non-attainment area. This would constitute an approvable SIP per the above criteria and growth could be accommodated.

IX. Time Schedule of Plan Activities (see Attachment J)

ATTACHMENT J

Schedule for Planned Activities

January 1978	-- Group I CTG issued (10)
	-- Stage I guidance issued
	-- Group I (5) RTCM guidance issued (Feb. 1978)
July 1978	-- Group II CTG issued
	-- Group II (14) RTCM guidance issued (Aug. 1978)
January 1979	-- SO_2--Regs
	-- TSP--Regs (traditional)
	Schedules (non-traditional)
	-- NO_x--Regs
	Schedules
	-- O_x & Regs (stationary) Group I-CTG and Stage I
	CO--- Schedules--I/M
	TCM
	Other measures
	-- Group III CTG issued (Dec. 1978)
July 1979	-- Plan approval/disapproval
	-- Legal authority--I/M (June 30, 1979)
	-- Last CTG's issued (Group IV)
January 1980	-- Submission of regs for Group II & III CTGs (15)
	-- Submission of legally enforceable procedures for RTCM continues as indicated in the 1979 schedules
	-- Annual report on progress toward meeting schedules

ATTACHMENT J (Continued)

JULY 1980	-- LEGAL AUTHORITY I/M (LEGISLATE NO OPPORTUNITY BETWEEN 8/7/77 AND 6/30/79) -- ANALYSIS OF ALTERNATIVE TCM SHOULD BE COMPLETED*
JANUARY 1981	-- REGULATIONS FOR GROUP IV CTGS -- REPRESENTATIVE LIST OF RTCM IMPLEMENTED ON PILOT OR DEMONSTRATION BASIS -- ANNUAL REPORT ON PROGRESS TOWARD MEETING SCHEDULES
JULY 1981	-- CONTINUED SUBMITTAL OF LEGALLY ENFORCEABLE PROCEDURES FOR RTCMS AS MAY HAVE BEEN INDICATED IN 1979 SCHEDULES
JANUARY 1982	-- I/M IMPLEMENTED FOR DECENTRALIZED SYSTEM (PRIVATE GARAGE) -- LEGALLY ENFORCEABLE PROCEDURES FOR ALL RTCM TO BE SUBMITTED
JULY 1982	-- SUBMISSION OF ALL NECESSARY MEASURES TO PROVIDE FOR ATTAINMENT (CO, O_x) STANDARDS BY NO LATER THAN DEC. 31, 1987
DECEMBER 1982	-- SO_2, TSP, NO_x STANDARDS ATTAINED -- I/M IMPLEMENTATION FOR CENTRALIZED SYSTEM (STATE) -- RTCM IMPLEMENTED (FULL IMPLEMENTATION FOR SOME OF THE MORE DIFFICULT MEASURES MAY EXTEND BEYOND 1982) -- RACT IMPLEMENTED

*UNLESS DEMONSTRATED THAT ANALYSIS OF SOME COMPONENTS (E.G. LONG RANGE IMPROVEMENTS) MAY REQUIRE ADDITIONAL TIME.

REFERENCES

1. Guidelines for Determining the Need for Plan Revisions to the Control Strategy Portion of Approved State Implementation Plans, OAQPS No. 1.2-011.

2. Control Strategy Preparation Manual for Photochemical Oxidant, OAQPS No. 1.2-047, January, 1977.

3. Interim Guideline on Air Quality Models, OAQPS No. 1.2-080, October, 1977.

4. Control Strategy Preparation Manual for Particulate Matter, OAQPS No. 1.2-049, September, 1977.

5. Uses, Limitations, and Technical Basis of Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors, EPA-450/2-77-021a, November, 1977.

6. Air Quality Analysis Workshop, Vol. I - Manual, EPA-450/3-75-080a, November 1975.

7. Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March, 1977.

8. Guideline for Development of Control Strategies in Areas with Fugitive Dust Problems, OAQPS No. 1.2-071.

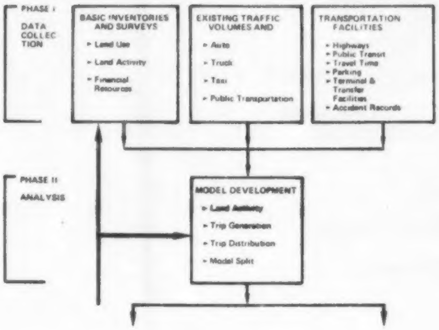
9. Controlled and Uncontrolled Emission Rates and Applicable Limitations for Eighty Processes, the Research Corporation of New England, September, 1976.

10. SIP Preparation Manual for NO_x, OAQPS No. 1.2-048.

Transportation — Related Issues

There is no narrative text that accompanies the visuals for this topic. The main points concerning this topic are covered in the visuals themselves.

GENERALIZED ACTIVITIES OF THE 3 C PLANNING PROCESS



PHASE I

DATA COLLECTION

BASIC INVENTORIES AND SURVEYS
- ► Land Use
- ► Land Activity
- ► Financial Resources

EXISTING TRAFFIC VOLUMES AND
- ► Auto
- ► Truck
- ► Taxi
- ► Public Transportation

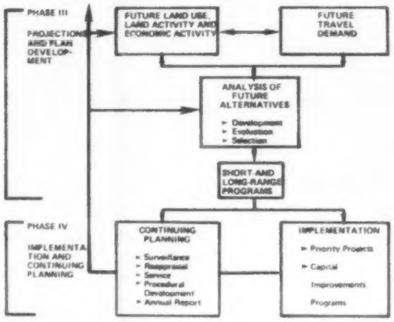
TRANSPORTATION FACILITIES
- ► Highways
- ► Public Transit
- ► Travel Time
- ► Parking
- ► Terminal & Transfer Facilities
- ► Accident Records

PHASE II

ANALYSIS

MODEL DEVELOPMENT
- ► Land Activity
- ► Trip Generation
- ► Trip Distribution
- ► Model Split

GENERALIZED ACTIVITIES OF THE 3-C PLANNING PROCESS (cont.)



PHASE III

PROJECTION AND PLAN DEVELOPMENT

FUTURE LAND USE, LAND ACTIVITY AND ECONOMIC ACTIVITY

FUTURE TRAVEL DEMAND

ANALYSIS OF FUTURE ALTERNATIVES
- ► Development
- ► Evaluation
- ► Selection

SHORT-AND LONG-RANGE PROGRAMS

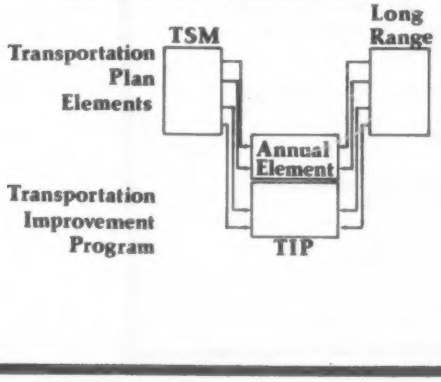
PHASE IV

IMPLEMENTATION AND CONTINUING PLANNING

CONTINUING PLANNING
- ► Surveillance
- ► Reappraisal
- ► Service
- ► Procedural Development
- ► Annual Report

IMPLEMENTATION
- ► Priority Projects
- ► Capital Improvements Programs

Relationship of TSM and Long Range Elements to TIP



Transportation Plan Elements

TSM

Long Range

Annual Element

Transportation Improvement Program

TIP

LIST OF SELECTED REASONABLY AVAILABLE TRANSPORTATION CONTROL MEASURES

- VEHICLE INSPECTION AND MAINTENANCE
- VAPOR RECOVERY FROM FUEL TRANSFER AND STORAGE AND FROM SOLVENT OPERATIONS
- IMPROVED PUBLIC TRANSIT
- EXCLUSIVE BUS AND CARPOOL LANES
- AREAWIDE CARPOOL PROGRAMS

- RESTRICTIONS ON PRIVATE AUTOMOBILE USE
- LONG-RANGE TRANSIT IMPROVEMENTS
- ON-STREET PARKING CONTROLS
- PARK-AND-RIDE AND FRINGE PARKING LOTS
- PEDESTRIAN MALLS

- EMPLOYEE PROGRAMS TO ENCOURAGE CAR AND VAN POOLING, MASS TRANSIT USE, BICYCLING, AND WALKING
- BICYCLE LANES AND STORAGE FACILITIES
- STAGGERED WORK HOURS
- ROAD PRICING TO DISCOURAGE SINGLE OCCUPANCY AUTOMOBILE USE

- CONTROLS ON EXTENDED VEHICLE IDLING
- TRAFFIC FLOW IMPROVEMENTS
- FLEET VEHICLE CONTROLS INCLUDING ALTERNATIVE FUELS AND ENGINE USE
- VEHICLE RETROFITS FOR OTHER THAN LIGHT-DUTY VEHICLES
- EXTREME COLD START EMISSION REDUCTION PROGRAMS

SELECTED KEY DATES FOR TRANSPORTATION PORTIONS OF REVISED STATE IMPLEMENTATION PLANS

FEBRUARY 7, 1978	JOINTLY DETERMINED DIVISION OF RESPONSIBILITIES
	LEAD PLANNING ORGANIZATION NOMINATED BY LOCAL OFFICIALS
APRIL 1, 1978	GOVERNOR CERTIFIES OR DESIGNATES LEAD PLANNING ORGANIZATION
JANUARY 1, 1979	STATE SUBMITS REVISED PLAN
JUNE 30, 1979	LEGAL AUTHORITY FOR INSPECTION/ MAINTENANCE PROGRAMS REQUIRED

SELECTED KEY DATES FOR TRANSPORTATION PORTIONS OF REVISED STATE IMPLEMENTATION PLANS (cont.)

JULY 30, 1980	COMPLETION OF COMPREHENSIVE ALTERNATIVES ANALYSIS
DECEMBER 31, 1981	DECENTRALIZED INSPECTION/MAINTENANCE PROGRAMS IN PLACE
JULY 1, 1982	SECOND STATE SUBMITTAL OF REVISED PLAN IF EXTENSION GRANTED

SELECTED KEY DATES FOR TRANSPORTATION PORTIONS OF REVISED STATE IMPLEMENTATION PLANS
(cont.)

DECEMBER 31, 1982	STANDARDS ATTAINMENT DEADLINE WHERE NO EXTENSION GRANTED
	CENTRALIZED INSPECTION/MAINTENANCE PROGRAMS IN PLACE
	INITIATION OF EXTENSIVE TRANSPORTATION MEASURES
DECEMBER 31, 1987	STANDARDS ATTAINMENT DEADLINE WHERE EXTENSION GRANTED

TRANSPORTATION PLANNING PROCESS GUIDELINES DEVELOPMENT SCHEDULE

NOVEMBER 28, 1977	FIRST DRAFT CIRCULATED
NOVEMBER 28-29, 1977	REVIEW BY MPO STEERING GROUP (NARC GRANT)
FEBRUARY 1, 1978	END OF COMMENT PERIOD ON FIRST DRAFT

TRANSPORTATION PLANNING PROCESS GUIDELINES DEVELOPMENT SCHEDULE
(cont.)

FEBRUARY 9, 1978	REVIEW BY PANEL OF TRANSPORTATION "EXPERTS"
FEBRUARY 15, 1978	SECOND DRAFT CIRCULATED
MARCH 1, 1978	BRIEFING FOR EPA REGIONAL OFFICES ON SECOND DRAFT

TRANSPORTATION PLANNING PROCESS GUIDELINES DEVELOPMENT SCHEDULE
(cont.)

MARCH 2-3, 1978	MAJOR EPA-DOT WORKSHOP ON SECOND DRAFT (NARC GRANT)
MARCH 15, 1978	EPA AND DOT JOINTLY ISSUE PLANNING PROCESS GUIDELINES
POST-MARCH 15, 1978	JOINT EPA-DOT REGIONAL MEETINGS
	MODIFICATION OF FHWA-UMTA REGULATIONS TO REFLECT GUIDELINES

TRANSPORTATION-RELATED PLAN ELEMENTS REQUIRED IN JANUARY 1979 PLAN REVISION

PLANS PROVIDING FOR ATTAINMENT BY 1982

- ADOPTED TRANSPORTATION MEASURES OR SCHEDULES
- EMISSION REDUCTIONS FROM TRANSPORTATION MEASURES
- CONTINGENCY STRATEGIES
- REASONABLE FURTHER PROGRESS – CONTINUOUS PHASED IMPLEMENTATION OF TRANSPORTATION MEASURES
- ALLOWABLE GROWTH RATE FOR TRANSPORTATION MEASURES

PLANS PROVIDING FOR ATTAINMENT BY 1982 (CONT.)

- SYSTEM FOR MONITORING GROWTH RATES FOR TRANSPORTATION SOURCES
- ANNUAL REPORTING ON PROGRESS IN MEETING SCHEDULES
- COMMITMENT OF RESOURCES – INCLUSION IN DOT PLANS AND PROGRAMS
- DOCUMENTATION OF PUBLIC, LOCAL GOVERNMENT, AND LEGISLATIVE INVOLVEMENT
- IDENTIFICATION AND ANALYSIS OF EFFECTS OF ALTERNATIVES: SUMMARY OF PUBLIC COMMENT

TRANSPORTATION-RELATED PLAN ELEMENTS REQUIRED IN JANUARY 1979 PLAN REVISION

(CONT.)

ADDITIONAL REQUIREMENTS FOR POST-1982 ATTAINMENT

COMMITMENT TO PUBLIC TRANSPORTATION MEASURES

DEMONSTRATION AND PILOT STUDIES

IMPLEMENTATION OF CURRENTLY PLANNED REASONABLE MEASURES

PROGRAM FOR EVALUATING RANGE OF ALTERNATIVES
- SINGLE AND COMBINED REASONABLE MEASURES
- LONG RANGE MEASURES AND GROWTH POLICIES

SCHEDULE FOR COMPLETING ALTERNATIVES ANALYSIS PROGRAM AND ADOPTING MEASURES

I / M SCHEDULE

1. INITIATION OF PUBLIC INFORMATION PROGRAM.
2. DECISION ON TYPE OF SYSTEM TO BE IMPLEMENTED.
3. DEVELOPMENT AND ISSUANCE OF RFPs.
4. AWARD TO CONTRACTOR(S).
5. INITIATION OF CONSTRUCTION OF FACILITIES.
6. COMPLETION OF CONSTRUCTION OF FACILITIES.
7. COMPLETION OF EQUIPMENT PURCHASE.
8. ADOPTION OF QUALITY CONTROL PROCEDURES AND GUIDELINES.
9. ADOPTION OF CUTPOINTS.
10. INITIATION OF HIRING AND TRAINING OF INSPECTORS OR LICENSING OF GARAGES.
11. INITIATION OF PILOT PROGRAM.
12. MECHANICS TRAINING AND/OR INFORMATION PROGRAM.
13. INITIATION OF MANDATORY MAINTENANCE.
14. INITIATION OF MORE STRINGENT PHASES OF THE PROGRAM (IF APPLICABLE).

Emission Inventory

emission inventories

WHAT ARE THE CLEAN AIR ACT REQUIREMENTS FOR EMISSION INVENTORIES ?

WHAT ARE THE CLEAN AIR ACT REQUIREMENTS FOR EMISSION INVENTORIES?

- CLEAN AIR ACT SECTION 172 (b) (4)
- COMPREHENSIVE, ACCURATE, CURRENT INVENTORY

WHAT IS THE
PURPOSE OF
AN EMISSION
INVENTORY
?

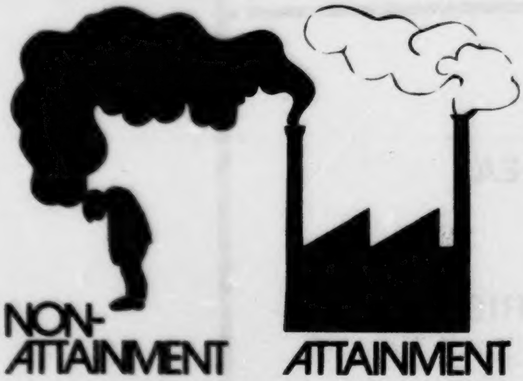
WHAT IS THE PURPOSE OF AN EMISSION INVENTORY?

- PLAN DEVELOPMENT
- REASONABLE FURTHER PROGRESS EVALUATION

WHAT AREAS
NEED TO
BE
INVENTORIED
?

WHAT AREAS NEED TO BE INVENTORIED?
- NONATTAINMENT AREA
- SIGNIFICANT SOURCES

NONATTAINMENT
AREAS
ALL SOURCES WITHIN AN
IDENTIFIED NONATTAINMENT
AREA MUST HAVE THEIR
EMISSIONS QUANTIFIED


NON-
ATTAINMENT
ATTAINMENT

LEVELS OF SIGNIFICANCE

POLLUTANT	AVERAGING TIME				
	ANNUAL	24-HOUR	8-HOUR	3 HOUR	1 HOUR
SO_2	$1\ \mu g/m^3$	$5\ \mu g/m^3$		$25\ \mu g/m^3$	
PM	$1\ \mu g/m^3$	$5\ \mu g/m^3$			
NO_2	$1\ \mu g/m^3$				
CO			$0.5\ mg/m^3$		$2\ mg/m^3$

WHAT SOURCES OF EMISSIONS SHOULD BE INVENTORIED ?

WHAT SOURCES OF EMISSIONS SHOULD BE INVENTORIED?

- **NEED ACCURATE ACCOUNTING**
- **SOURCES GREATER THAN 100 TONS PER YEAR POTENTIAL**

APPENDIX C
40 CFR
PART 51

WHAT SOURCES OF EMISSIONS SHOULD BE INVENTORIED?
- NEED ACCURATE ACCOUNTING
- SOURCES GREATER THAN 100 TONS PER YEAR POTENTIAL
- MOBILE SOURCES

MOBILE SOURCE EMISSIONS

WHAT INFORMATION
NEEDS TO BE
INCLUDED

?

WHAT INFORMATION NEEDS TO BE INCLUDED?

- DATA MUST BE SUFFICIENT FOR PLAN DEVELOPMENT
- INFORMATION GENERALLY NEEDED
  - EMISSION POINTS
  - TYPE OF PROCESS
  - TYPE AND QUANTITY OF EMISSIONS
  - STACK PARAMETERS

WHAT YEAR
SHOULD THE
INVENTORY
BE FOR

?

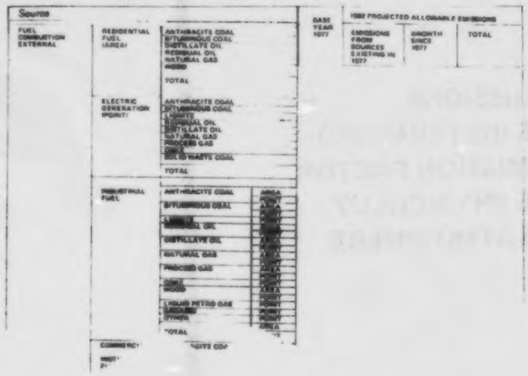
WHAT YEAR SHOULD THE INVENTORY BE FOR?

- CONSISTENT WITH AIR QUALITY DATA
- GENERALLY WILL BE 1977

WHAT FORMAT SHOULD THE INVENTORY BE IN ?

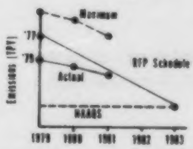
WHAT FORMAT SHOULD THE INVENTORY BE IN?

- SUMMARY INVENTORY FOR BASE YEAR AND PROJECTED ATTAINMENT DATE (TSP, SO_2, NO_x, CO)
- REASONABLE FURTHER PROGRESS REPORTING



Source				BASE YEAR 1977	1982 PROJECTED ALLOWABLE EMISSIONS		
					EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
FUEL COMBUSTION EXTERNAL	RESIDENTIAL FUEL (AREA)	ANTHRACITE COAL BITUMINOUS COAL DISTILLATE OIL RESIDUAL OIL NATURAL GAS WOOD					
		TOTAL					
	ELECTRIC GENERATION (POINT)	ANTHRACITE COAL BITUMINOUS COAL LIGNITE RESIDUAL OIL DISTILLATE OIL NATURAL GAS PROCESS GAS COKE SOLID WASTE COAL					
		TOTAL					
	INDUSTRIAL FUEL	ANTHRACITE COAL	AREA				
		BITUMINOUS COAL	[illegible]				
		LIGNITE RESIDUAL OIL	[illegible]				
		DISTILLATE OIL	[illegible]				
		NATURAL GAS	[illegible]				
		PROCESS GAS	[illegible]				
		COKE WOOD	[illegible]				
		LIQUID PETRO GAS BAGASSE OTHER	POINT AREA				
		TOTAL					
	COMMERC	ACITE COA					
	INST						

Annual Report



SUMMARY FOR YEAR 1981

	RFP Milestone			Actual Emissions *			Maximum Emissions *			Growth > 1977		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
TOTAL												

* includes growth

*Specific nonlinear RFP's may require more reporting

WHAT FORMAT SHOULD THE INVENTORY BE IN? cont.

- DEFINITION ACTUAL EMISSIONS
- DEFINITION OF ALLOWABLE EMISSIONS

ACTUAL EMISSIONS

THOSE EMISSIONS (DETERMINED BY SOURCE TEST, EMISSION FACTOR, ETC.) WHICH ARE PHYSICALLY EMITTED TO THE ATMOSPHERE

ALLOWABLE EMISSIONS: the emission rate calculated using the maximum rated capacity and the most stringent of the following:

A. Applicable new source performance standards set forth in 40 CFR Part 60,

B. Applicable emission limitations, or

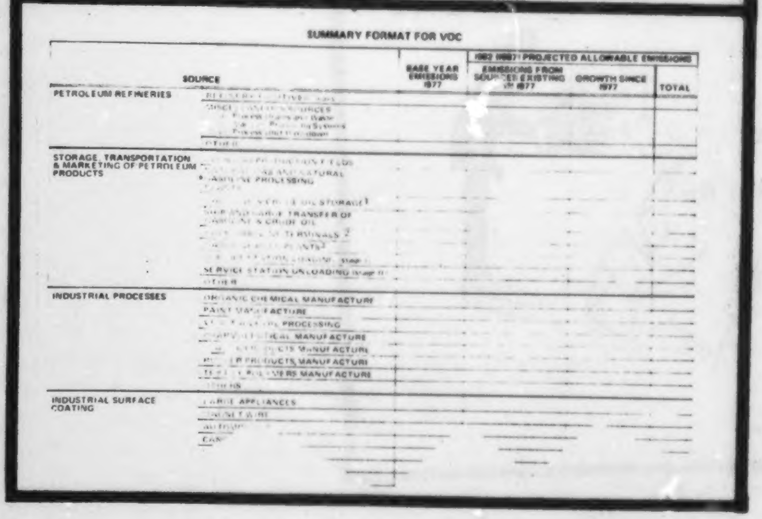
C. The emission rate agreed to by the source as a permit condition.

VOLATILE ORGANIC COMPOUND INVENTORIES

VOLATILE ORGANIC COMPOUND INVENTORIES

- SUMMARY INVENTORY FOR BASE YEAR AND PROJECTED ATTAINMENT DATE
- EXEMPTED COMPOUNDS MAY BE EXCLUDED

SOURCES OF VOLATILE ORGANIC COMPOUNDS (VOC)



SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS: EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVE [illegible]				
	MISCELLANEOUS SOURCES Process Drains and Waste Water [illegible] Processing Systems Process Unit [illegible]down				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	[illegible] PRODUCTION FIELDS				
	[illegible] GAS AND NATURAL GASOLINE PROCESSING [illegible]				
	[illegible] VOLATILE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE & CRUDE OIL				
	[illegible] TERMINALS [2]				
	[illegible] PLANTS[2]				
	[illegible] STATION LOADING (Stage I)				
	SERVICE STATION UNLOADING (Stage II)				
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	[illegible] PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	[illegible] PRODUCTS MANUFACTURE				
	[illegible] PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTO[illegible]				
	CAN[illegible]				

EXEMPTED VOLATILE ORGANIC COMPOUNDS

Federal Register
Vol. 42, No. 131
July 8, 1977

SEPARATE INVENTORY MUST BE SUBMITTED FOR EACH NONATTAINMENT POLLUTANT

FULL EMISSION INVENTORY MUST BE SUBMITTED TO NATIONAL AIR DATA BRANCH

SUMMARY

THE INVENTORY MUST BE COMPREHENSIVE, ACCURATE, AND CURRENT.

THE PURPOSE OF THE INVENTORY MUST BE OUTLINED.

THE AREA TO BE INVENTORIED MUST BE IDENTIFIED.

ALL SOURCES AFFECTING THE NON-ATTAINMENT AIR QUALITY SHOULD BE INCLUDED REGARDLESS OF LOCATION.

THE INVENTORY MUST CONTAIN SUFFICIENT DATA TO ENSURE PROPER PLAN DEVELOPMENT.

THE YEAR OF THE INVENTORY MUST BE KNOWN.

APPROPRIATE, CONSISTENT FORMATS SHOULD BE USED.

EMISSION INVENTORIES

I. What are the Clean Air Act requirements for emission inventories?

- Requirements for emission inventories are stated in Section 172(b)(4) of the Clean Air Act.
- Requires that emission inventories be comprehensive, accurate, and current.

II. What is the purpose of the emission inventory?

- To provide the emission information necessary to develop a control strategy.
- To provide a basis for and a means to evaluate reasonable further progress required under Section 172(b)(3).

III. What area needs to be inventoried?

- The nonattainment area is of primary concern.
- Significant sources affecting nonattainment outside the nonattainment area should be included.

IV. What sources should be inventoried?

- Need an accurate accounting of all emission sources in the nonattainment area.
- Sources greater than 100 tons per year potential should be identified as point sources.
- Mobile sources contribute significant emissions of all pollutants.
- Fugitive dust, fugitive emissions, and resuspended dust should be included where they contribute to the problem.

V. What information should be included in the inventory?

- Data must be sufficient for proper plan development.
- Information that is generally needed
  - Emission points

- Type of process
- Type and quantity of emissions
- Stack parameters

VI. What year should the inventory be for?

* Should accurately reflect the emissions corresponding to the air quality data used.

* 1977 current inventory will be sufficient in most cases.

VII. What format should be used to summarize the inventory for plan submittal?

* Summary format (TSP,SO_2,NO_x,CO) for base year and for projected attainment date included.

* Summary format for reasonable further progress evaluation included.

* Actual emissions - those emissions (determined by source test, emission factor, etc.) which are physically emitted to the atmosphere.

* Allowable emissions - the emission rate calculated using the maximum rated capacity and the most stringent of the following;
a. Applicable New Source Performance Standard as set forth in 40 CFR Part 60,
b. Applicable emission limitation, or
c. the emission rate agreed to by the source as a permit condition.

VIII. Inventories for volatile organic compounds.

* There is a different summary format for VOC inventories with source categories consistent with RACT requirements.

* Compounds exempted from control in Volume 42, No. 131, July 8, 1977, 35314-35316 of the Federal Register need not be included in the inventory.

IX. Additional points
* Separate inventory for each nonattainment pollutant.

* Reporting requirements of 40 CFR 51.7 should be met.

X. Summary

- The inventory must be comprehensive, accurate, and current.
- The purpose of the inventory must be outlined.
- The area to be inventoried must be defined.
- All sources affecting the non-attainment air quality should be included regardless of location.
- The inventory must contain sufficient data to ensure proper plan development.
- The year of the inventory must be known, and
- Appropriate, consistent formats should be used.

APPENDIX C—MAJOR POLLUTANT SOURCES

CHEMICAL PROCESS INDUSTRIES

Adipic acid.
Ammonia.
Ammonium nitrate.
Carbon black.[1]
Charcoal.[1]
Chlorine.
Detergent and soap.[1]
Explosives (TNT and nitrocellulose).[1]
Hydrofluoric acid.[1]
Nitric acid.
Paint and varnish manufacturing.[1]
Phosphoric acid.[1]
Phthalic anhydride.
Plastics manufacturing.[1]
Printing ink manufacturing.[1]
Sodium carbonate.[1]
Sulfuric acid.[1]
Synthetic fibers.
Synthetic rubber.
Terephthalic acid.

FOOD AND AGRICULATURAL INDUSTRIES

Alfalfa dehydrating.[1]
Ammonium nitrate.
Coffee roasting.[1]
Cotton ginning.[1]
Feed and grain.[1]
Fermentation processes.
Fertilizers.[1]
Fish meal processing.
Meat smoke houses.[1]
Starch manufacturing.[1]
Sugar cane processing.[1]

MINERAL PRODUCTS INDUSTRIES

Asphalt roofing.[1]
Asphaltic concrete batching.[1]
Bricks and related clay refractories.[1]
Calcium carbide.[1]
Castable refractories.[1]
Cement.[1]
Ceramic and clay processes.[1]
Clay and fly ash sintering.[1]
Coal cleaning.[1]
Concrete batching.[1]
Fiberglass manufacturing.[1]
Frit manufacturing.[1]
Glass manufacturing.[1]
Gypsum manufacturing.[1]
Lime manufacturing.[1]
Mineral wood manufacturing.[1]
Paperwood manufacturing.[1]
Perlite manufacturing.[1]
Phosphate rock preparation.[1]
Rock, gravel, and sand quarrying and processing.[1]

PETROLEUM REFINING AND PETROCHEMICAL OPERATIONS [1]

WOOD PROCESSING [1]

PETROLEUM STORAGE (Storage tanks and bulk terminals)

MISCELLANEOUS

Fossil fuel stream electric powerplants.[1]
Municipal or equivalent incinerators.[1]
Open burning dumps.[1]

METALLURGICAL INDUSTRIES

Primary metals industries:
- Aluminum ore reduction.[1]
- Copper Smelters.[1]
- Ferroalloy production.[1]
- Iron and steel mills.[1]
- Lead smelters.[1]
- Metallurgical coke manufacturing.[1]
- Zinc.[1]

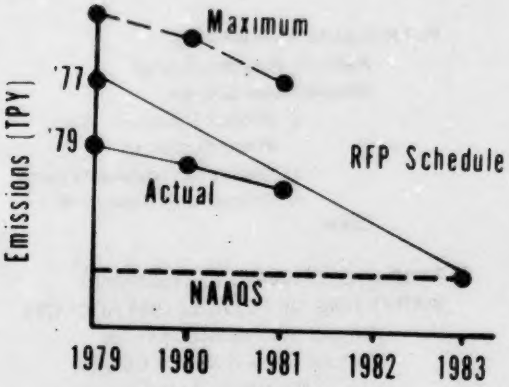
Secondary metals industries:
- Aluminum operations.[1]
- Brass and bronze smelting.[1]
- Ferroalloys.[1]
- Gray iron foundries.[1]
- Lead smelting.[1]
- Mangesium smelting.[1]
- Steel foundries.[1]
- Zinc processes.[1]

---

[1] Major sources of sulfur oxides and/or particulate matter.

Source				BASE YEAR 1977	1982 PROJECTED ALLOWABLE EMISSIONS		
					EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
FUEL COMBUSTION EXTERNAL	RESIDENTIAL FUEL (AREA)	ANTHRACITE COAL					
		BITUMINOUS COAL					
		DISTILLATE OIL					
		RESIDUAL OIL					
		NATURAL GAS					
		WOOD					
		TOTAL					
	ELECTRIC GENERATION (POINT)	ANTHRACITE COAL					
		BITUMINOUS COAL					
		LIGNITE					
		RESIDUAL OIL					
		DISTILLATE OIL					
		NATURAL GAS					
		PROCESS GAS					
		COKE					
		SOLID WASTE COAL					
		TOTAL					
	INDUSTRIAL FUEL	ANTHRACITE COAL	AREA				
			POINT				
		BITUMINOUS COAL	AREA				
			POINT				
		LIGNITE	POINT				
		RESIDUAL OIL	AREA				
			POINT				
		DISTILLATE OIL	AREA				
			POINT				
		NATURAL GAS	AREA				
			POINT				
		PROCESS GAS	AREA				
			POINT				
		COKE	POINT				
		WOOD	AREA				
			POINT				
		LIQUID PETRO GAS	POINT				
		BAGASSE	POINT				
		OTHER	POINT				
		TOTAL	AREA				
			POINT				
	COMMERCIAL INSTITUTIONAL FUEL	ANTHRACITE COAL	AREA				
			POINT				
		BITUMINOUS COAL	AREA				
			POINT				
		LIGNITE	POINT				
		RESIDUAL OIL	AREA				
			POINT				
		DISTILLATE OIL	AREA				
			POINT				
		NATURAL GAS	AREA				
			POINT				
		WOOD	AREA				
			POINT				
		LIQUID PETROL GAS	POINT				
		OTHER	POINT				
		TOTAL	AREA				
			POINT				
	OTHER		POINT				
	TOTAL EXTERNAL COMBUSTION		AREA				
			POINT				
FUEL COMBUSTION INTERNAL	ELECTRIC GENERATION	DISTILLATE OIL					
		NATURAL GAS					
		DIESEL					
		OTHER					
		TOTAL					
	INDUSTRIAL FUEL	DISTILLATE OIL					
		NATURAL GAS					
		GASOLINE					
		DIESEL					
		OTHER					
		TOTAL					
	COMMERCIAL INSTITUTIONAL FUEL	DIESEL					
		TOTAL					
	ENGINE TESTING AIRCRAFT						
	TOTAL INTERNAL COMBUSTION						
TOTAL FUEL COMBUSTION		AREA					
		POINT					
INDUSTRIAL PROCESS (POINT)	CHEMICAL MANUFACTURING						
	FOOD/AGRICULTURE						
	PRIMARY METAL						
	SECONDARY METALS						
	MINERAL PRODUCTS						
	PETROLEUM INDUSTRY						
	WOOD PRODUCTS						
	METAL FABRICATION						
	LEATHER PRODUCTS						
	TEXTILE MANUFACTURING						
	INPROCESS FUEL						
	OTHER/NOT CLASSIFIED						
	TOTAL						
SOLID WASTE DISPOSAL	GOVERNMENT (POINT)	MUNIC INCIN					
		OPEN BURNING					
		OTHER					
		TOTAL					
	RESIDENTIAL (AREA)	ON-SITE INCIN					
		OPEN BURNING					
		TOTAL					
	COMMERCIAL-INSTITUTIONAL	ON-SITE INCINERATION	AREA				
			POINT				
		OPEN BURNING	AREA				
			POINT				
		APARTMENT	POINT				
		OTHER	AREA				
			POINT				
		TOTAL	AREA				
			POINT				
	INDUSTRIAL	ON SITE INCINERATION	AREA				
			POINT				
		OPEN BURNING	AREA				
			POINT				
		AUTO BODY INCIN	POINT				
		OTHER	POINT				
		TOTAL	AREA				
			POINT				
	TOTAL SOLID WASTE DISPOSAL		AREA				
			POINT				
TRANSPORTATION (AREA)	LAND VEHICLES	GASOLINE	LIGHT DUTY				
			HEAVY DUTY				
			OFF HIGHWAY				
			TOTAL				
		DIESEL	HEAVYDUTY				
			OFF HIGHWAY				
			RAIL				
			TOTAL				
	AIRCRAFT	MILITARY					
		CIVIL					
		COMMERCIAL					
		TOTAL					
	VESSELS	BITUMINOUS COAL					
		DIESEL FUEL					
		RESIDUAL OIL					
		GASOLINE					
		TOTAL					
	TOTAL TRANSPORATION						
MISCELLANEOUS	FIRES	STRUCTURAL					
		FROST CONTROL					
		SLASH BURNING					
		WILD FOREST					
		AGRICULTURAL					
	DUST CAUSED BY HUMAN AGITATION OF THE AIR	UNPAVED ROADS					
		UNPAVED AIRSTRIPS					
		PAVED ROADS					
		MINERAL PROCESSING					
		TILLING ACTIVITIES					
		LOADING CRUSHED ROCK, SAND, GRAVEL					
		CONSTRUCTION					
	AIRBORNE DUST CAUSED BY NATURAL WINDS	STORAGE PILES					
		TILLED LAND					
		UNTILLED LAND					
GRAND TOTAL		AREA					
		POINT					

Annual Report



SUMMARY FOR YEAR 1981

	RFP Milestone			Actual Emissions *			Maximum Emissions *			Growth > 1977		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
TOTAL												

* includes growth

●Specific nonlinear RFP's may require more reporting

SOURCES OF VOLATILE ORGANIC COMPOUNDS (VOC)

PETROLEUM REFINERIES
- Refinery Fugitives (leaks)
- Miscellaneous Sources
  - a) Process Drains and Waste Water Separators
  - b) Vacuum Producing Systems
  - c) Process Unit Blowdown
- Other

STORAGE, TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS
- Oil and Gas Production Fields
- Natural Gas and Natural Gasoline Processing Plants
- Gasoline and Crude Oil Storage[1]
- Ship and Barge Transfer of Gasoline and Crude Oil
- Bulk Gasoline Terminals[2]
- Gasoline Bulk Plants[3]
- Service Station Loading (Stage I)
- Service Station Unloading (Stage II)
- Others

INDUSTRIAL PROCESSES
- Organic Chemical Manufacture
- Paint Manufacture
- Vegetable Oil Processing
- Pharmaceutical Manufacture
- Plastic Products Manufacture
- Rubber Products Manufacture
- Textile Polymers Manufacture
- Others

INDUSTRIAL SURFACE COATING
- Large Appliances
- Magnet Wire
- Automobiles
- Cans
- Metal Coils
- Paper
- Fabric
- Metal Furniture
- Wood Furniture
- Flat Wood Products
- Other Metal Products
- Others

NON-INDUSTRIAL SURFACE COATING
- Architectural Coatings
- Auto Refinishing
- Others

OTHER SOLVENT USE
- Degreasing
- Dry Cleaning
- Graphic Arts
- Adhesives
- Cutback Asphalt
- Other Solvent Use

OTHER MISCELLANEOUS SOURCES
- Fuel Combustion
- Solid Waste Disposal
- Forest, Agricultural, and Other Open Burning

MOBILE SOURCES
- Highway Vehicles
  - a) Light Duty Automobiles
  - b) Light Duty Trucks
  - c) Heavy Duty Gasoline Trucks
  - d) Heavy Duty Diesel Trucks
  - e) Motorcycles
- Off-Highway Vehicles
  - Rail
  - Aircraft
  - Vessels

TOTAL VOC EMISSIONS FROM MOBILE SOURCES

TOTAL VOLATILE ORGANIC EMISSIONS

---

[1] Includes all storage facilities except those at service stations and bulk plants.

[2] Emissions from loading tank trucks and rail cars.

[3] Emissions from storage and transfer operations.

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE & CRUDE OIL				
	BULK GASOLINE TERMINALS [2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING (stage I)				
	SERVICE STATION UNLOADING (stage II)				
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES				
	CANS				
	METAL COILS				
	PAPER				
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE				
	FLAT WOOD PRODUCTS				
	OTHER METAL PRODUCTS				
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS				
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING				
	DRY CLEANING				
	GRAPHIC ARTS				
	ADHESIVES				
	CUTBACK ASPHALT				
	OTHER SOLVENT USE				
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING				
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES					
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles				
	OFF-HIGHWAY VEHICLES				
	RAIL				
	AIRCRAFT				
	VESSELS				
TOTAL VOC EMISSIONS FROM MOBILE SOURCES					
TOTAL VOLATILE ORGANIC EMISSIONS					

[1] Includes all storage facilities except those at service stations and bulk plants.

[2] Emissions from loading tank trucks and rail cars.

[3] Emissions from storage and transfer operations.

EXEMPTED VOLATILE ORGANIC COMPOUNDS

Table 1

Volatile organic compounds of negligible photochemical reactivity that should be exempt from regulations under State Implementation Plans

- Methane
- Ethane
- 1, 1, 1 - Trichloroethane (methyl chloroform)[1]
- Trichlorotriflouroethane (freon 113)[1]

[1] The compounds have been implicated as having deletorious effects on stratospheric ozone and, therefore, may be subject to future controls

Table 2

Volatile organic compounds of low reactivity[2]

- Propane
- Acetone
- Methyl ethyl ketone
- Methanol
- Isopropanol
- Methyl benxoate
- Tertiary alkyl alcohols
- Methyl acetate
- Phenyl acetate
- Ethyl amines
- Acetylene
- n, n - dimethyl formanide

[2] Only yield significant oxidants during multi-day stagnations

Federal Register, Vol. 42, No: 131; July 8, 1977, 35314-35316

References on Emission Inventories

1. Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds - Volume I - EPA-450/2-77-028, December, 1977.

2. Guidelines for Air Quality Maintenance Planning and Analysis - Volume 7: Projecting County Emissions, Second Edition - EPA-450/4-74-008.

3. Guidelines for Air Quality Maintenance Planning and Analysis-Volume 13: Allocating Projected Emissions to Sub-County Areas - EPA-450/4-74-014, November, 1974, and Appendices A & B - EPA-450/4-74-014-a, March, 1975.

4. AEROS Manual Series

   (a) Volume I: AEROS Overview, EPA-450/2-76-001, February, 1976.

   (b) Volume II: AEROS Users Manual, EPA-450/2-76-029, December, 1976.

   (c) Volume III: Summary and Retrieval (Second Edition), EPA-450/2-76-009a, July, 1977.

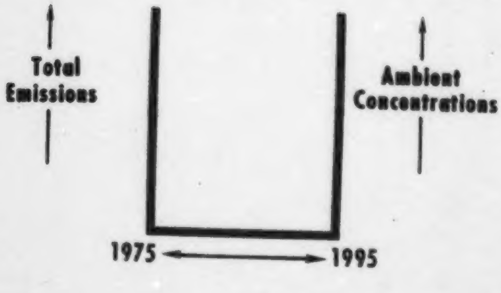
Emissions — Air Quality Relationships

DETERMINING REQUIRED EMISSION REDUCTIONS

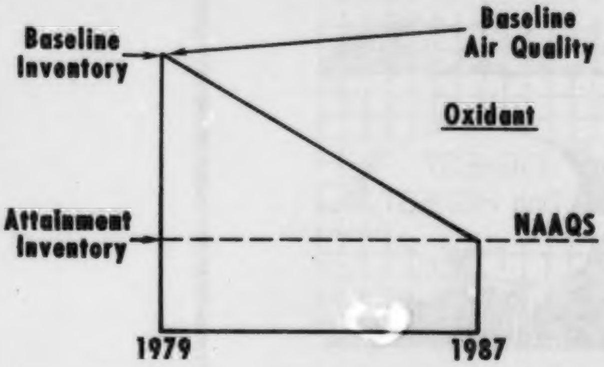
DETERMINING REQUIRED EMISSION REDUCTIONS

- ● ESTABLISH BASELINE AIR QUALITY
- ● ESTABLISH BASELINE EMISSION INVENTORY
- ● MODELING
- ● CALCULATE REQUIRED REDUCTIONS

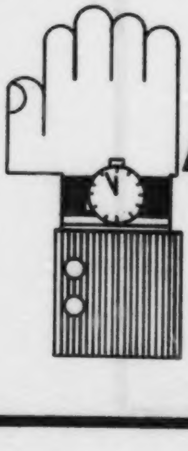
DETERMINING REQUIRED EMISSION REDUCTION


Total Emissions
Ambient Concentrations
1975
1995

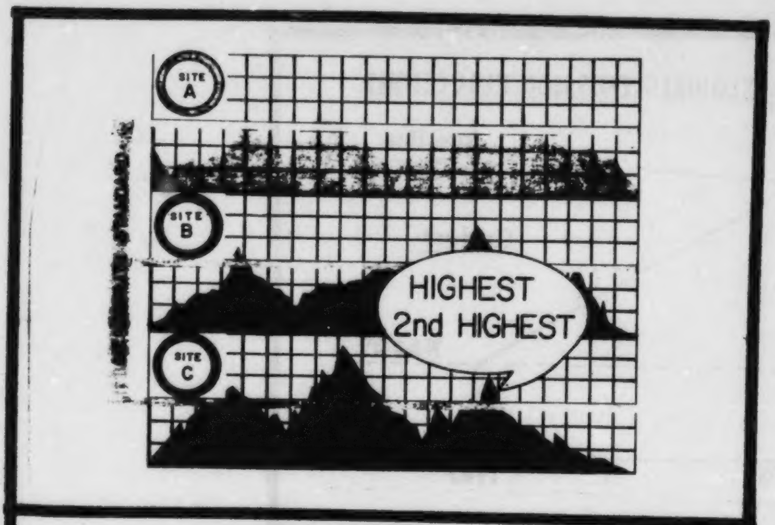
DETERMINING REQUIRED EMISSION REDUCTIONS

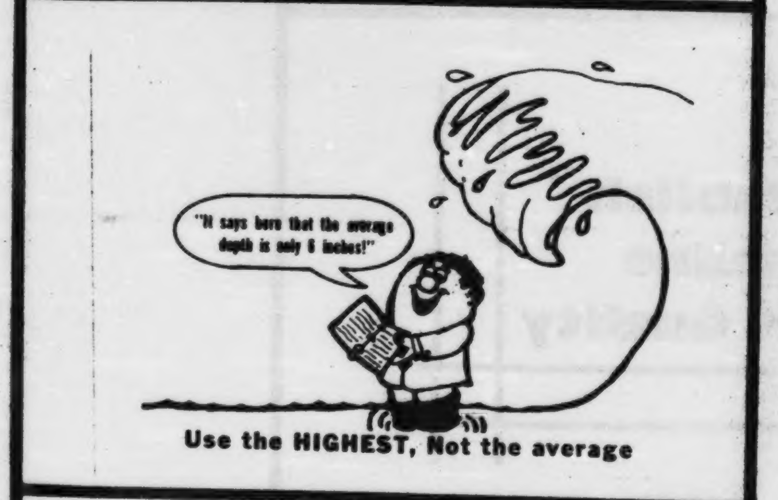

Baseline Air Quality
Baseline Inventory
Oxidant
Attainment Inventory
NAAQS
1979
1987

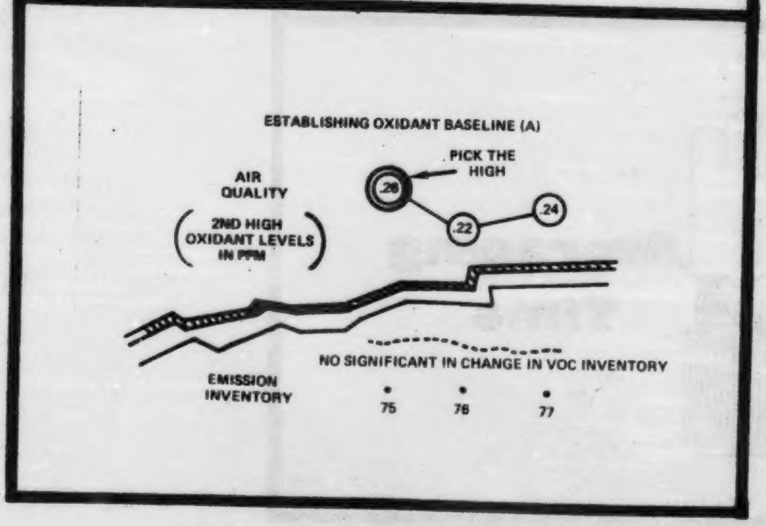
Establish Baseline Air Quality



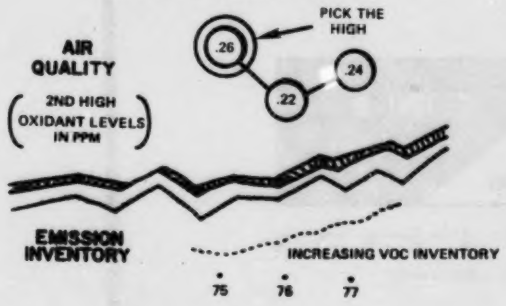
Averaging Time


SITE A
SITE B
SITE C
HIGHEST
2nd HIGHEST

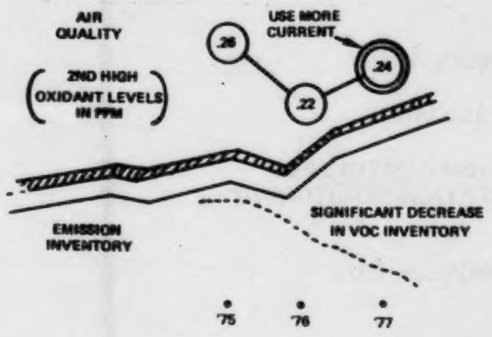

"It says here that the average depth is only 6 inches!"
Use the HIGHEST, Not the average


ESTABLISHING OXIDANT BASELINE (A)
PICK THE HIGH
.26
.22
.24
AIR QUALITY
(2ND HIGH OXIDANT LEVELS IN PPM)
NO SIGNIFICANT IN CHANGE IN VOC INVENTORY
EMISSION INVENTORY
75
76
77

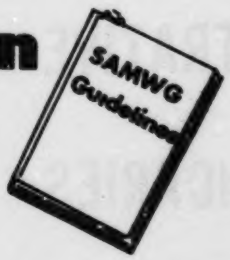
ESTABLISHING OXIDANT BASELINE (B)

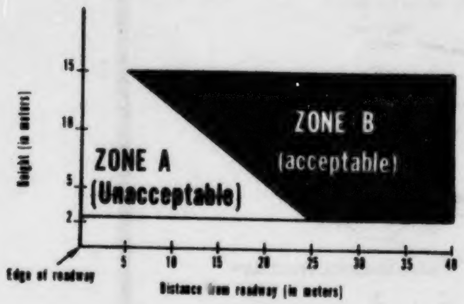


ESTABLISHING OXIDANT BASELINE (C)



Site Selection


SAMWG Guidelines



RECOMMENDED ACCEPTABLE ZONE FOR SITING TSP MONITORS

REFERENCE:

APPENDIX S

SAMWG GUIDANCE

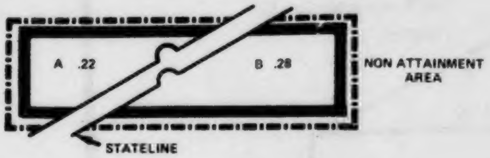
"NETWORK DESIGN IN SITING FOR STATE IMPLEMENTATION MONITORING"

EPA, OAQPS, NOV. 25, 1977

IMPACT OF ADMINISTRATIVE BOUNDARIES

ONE NONATTAINMENT AREA DIVIDED INTO

TWO PORTIONS BY INTERVENING STATE LINE


A .22
B .28
NON ATTAINMENT AREA
STATELINE

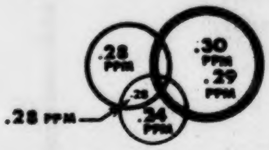
THE BASELINE AIR QUALITY FOR BOTH

PORTIONS OF THE NONATTAINMENT AREA

BECOMES .28 PPM

USE OF CIRCLE TO DETERMINE

APPLICABLE OXIDANT DESIGN VALUES


.28 PPM
.30 PPM
.29 PPM
.28
.24 PPM
.28 PPM

USE THE HIGHEST OXIDANT VALUE WITHIN

THE APPLICABLE CIRCLE

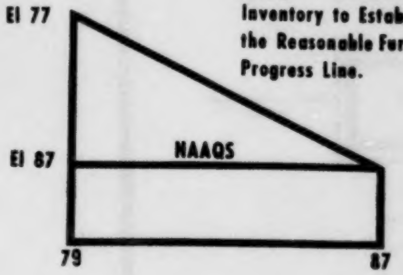
▬ .30 PPM

━ .28 PPM

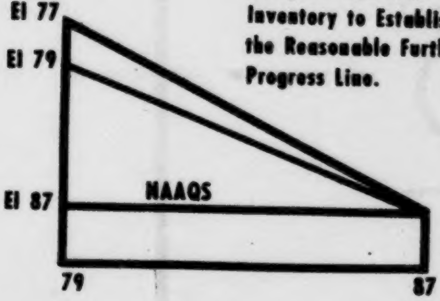
— .28 PPM

BASELINE INVENTORY

- USE 1977 OR MOST RECENT AVAILABLE
- ALL ELEMENTS OF INVENTORY MUST BE IN CONSISTENT UNITS, EITHER ALL NMHC OR ALL TOTAL HC
- USE MOST ACCURATE INVENTORY ATTAINABLE
- DO NOT GROW THE 1977 INVENTORY TO DATE OF SUBMITTAL


EI 77
EI 87
NAAQS
79
87

Using '77 Emission Inventory to Establish the Reasonable Further Progress Line.


EI 77
EI 79
EI 87
NAAQS
79
87

Using 79 Emission Inventory to Establish the Reasonable Further Progress Line.

MODELING

1. SELECT BEST MODEL FOR SPECIFIC POLLUTANT
2. SELECT BEST MODEL CONSISTENT WITH AVAILABLE RESOURCES
3. APPLY MODELS ACCURATELY
4. AVAILABLE RESOURCES (emission inventory & modeling capability)

Use of Best Model

MODELS WHICH OVERESTIMATE THE NEED FOR CONTROL CAN BE EXPENSIVE .

- ● MONEY
- ● CREDIBILITY

MODELS WHICH UNDERESTIMATE THE NEED FOR CONTROL CAN BE EXPENSIVE.

- ● MONEY
- ● CREDIBILITY
- ● MANPOWER
- ● TIME

NONREACTIVE POLLUTANTS
(TSP SO_2 NO_x CO)

USE

AQDM ● CDM ● CDMQC ● TCM

Use of Rollback

Not Appropriate

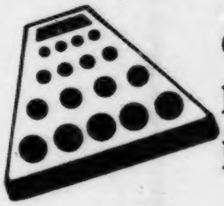
REACTIVE POLLUTANTS
(HYDROCARBONS ● OXIDANTS)

USE

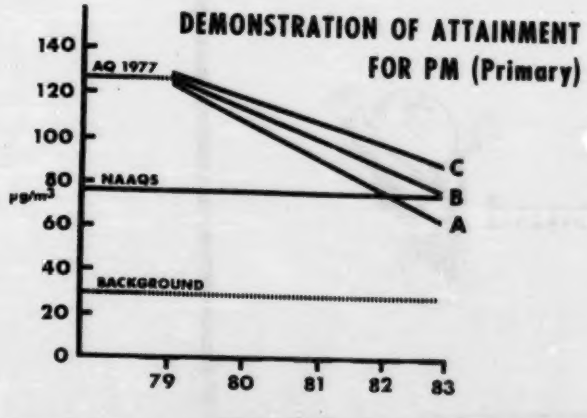
● SAI ● LIRAQ
● EKMA
● LINEAR ROLLBACK ● APPENDIX J

REVIEW FOUR STEPS

- ✓ ● ESTABLISH BASELINE AIR QUALITY
- ✓ ● ESTABLISH BASELINE EMISSION INVENTORY
- ✓ ● MODELING
- ● CALCULATE REQUIRED REDUCTIONS

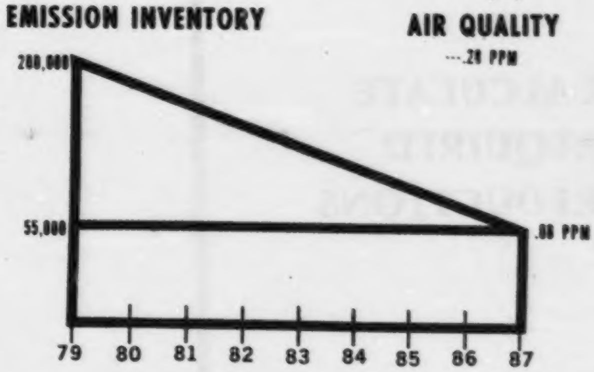


CALCULATE REQUIRED REDUCTIONS

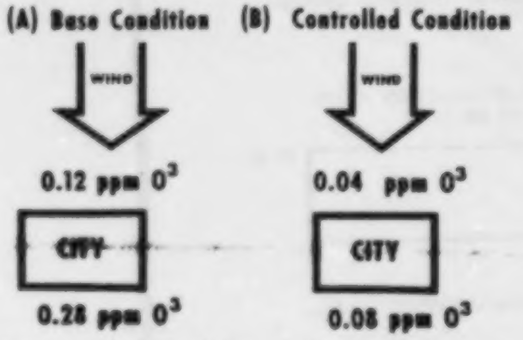


DEMONSTRATION OF ATTAINMENT FOR PM (Primary)

Calculating Required Reductions For Oxidants



Transport and Background



(A) Base Condition (B) Controlled Condition

0.12 ppm O^3 0.04 ppm O^3

0.28 ppm O^3 0.08 ppm O^3

Conceptual view of base and controlled states

ADJUSTING FOR TRANSPORT

1. ADDITIVITY (A)
   NORMALLY BETWEEN 20% and 70%
2. NATURAL BACKGROUND
   .02 – .05ppm
3. MAN MADE BACKGROUND
4. REDUCIBLE TRANSPORT
   ORIGINAL TRANSPORT (T_O) MINUS FINAL TRANSPORT (T_F)

AQ ADJUSTED = AQ OBSERVED – A (REDUCIBLE TRANSPORT)

.24 = .28 – .50 (.12 – .04)

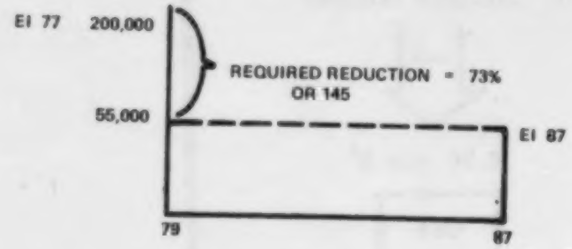
ADJUSTING FOR BACKGROUND
AND
TRANSPORT USING LINEAR ROLLBACK

PART CONTROL BACKGROUND

$$\frac{AQ_{ADJUSTED} - AQ\ STANDARD}{AQ_{ADJUSTED} - A\ (BACKGROUND)}$$

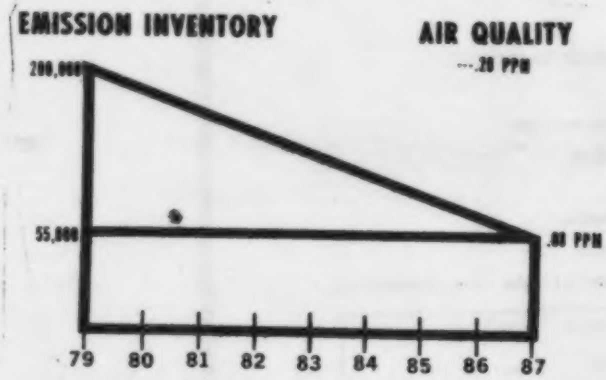
$$\frac{.24 - .08}{.24 - .5(.04)} = \frac{.16}{.22} = 73\%$$

CALCULATING REQUIRED EMISSION INVENTORY REDUCTIONS FOR ATTAINMENT OF OXIDANT STANDARD


EI 77
200,000
REQUIRED REDUCTION = 73%
OR 145
55,000
EI 87
79
87

EI_{77} − REQUIRED REDUCTION = EI_{87}

200 − 145 = 55



EMISSIONS-AIR QUALITY RELATIONSHIPS

DETERMINING REQUIRED EMISSION REDUCTIONS

I. Overview - 4 steps in this process:

A. Establishing baseline air quality
B. Establishing baseline inventory
C. Modeling
D. Determining reductions necessary to achieve standard

II. Establishing baseline air quality

SIP-related emission limits should be based on representative concentration estimates which result in the most stringent control requirements. In all cases these concentration estimates are assumed to be a sum of the concentration contributed by the source and an appropriate background concentration.

A. Variations with time

1. Averaging time--The standard which is exceeded by the greatest percentage is considered the restrictive standard and will determine the appropriate averaging time for establishing baseline air quality.

2. Variations by year--Select the highest of the three annual second high values (or annual averages) from the field of monitors during the last three years unless a lower value from among those three can be justified on the basis of recent inventory reductions. See Figure (1).

Figure (1)

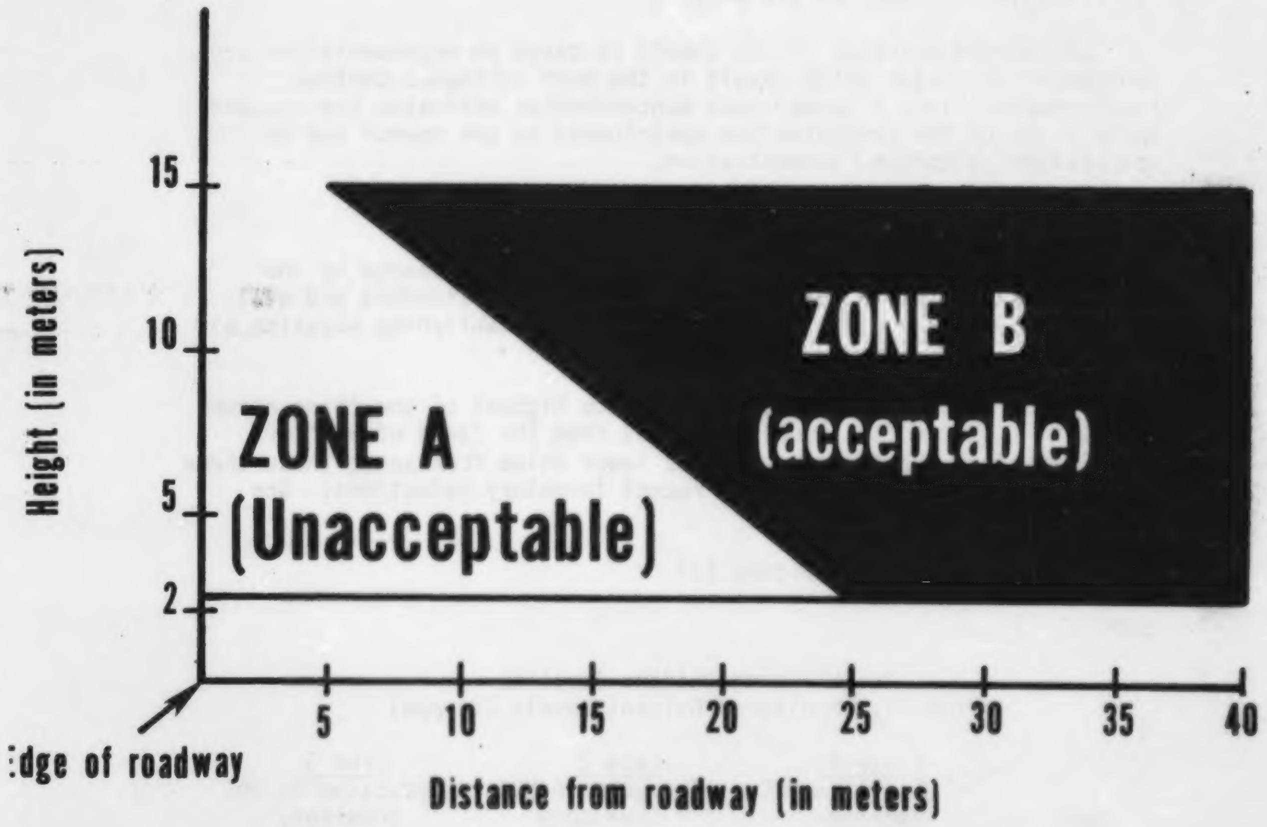
EXAMPLE:

Establishing Oxidant Baseline
Second High Monitored Oxidant Levels (in ppm)

Year	Case 1 No Change in VOC Inventory	Case 2 Increase in VOC Inventory	Case 3 Reduction in VOC Inventory
1975	.26	.26	.26
1976	.22	.22	.22
1977	.24	.24	.24

Figure 2

RECOMMENDED ACCEPTABLE ZONE FOR SITING TSP MONITORS



In the preceding example, the lower oxidant value (.24) can be used only where it can be justified on the basis of inventory reductions during that time period. Otherwise, the highest (.26) of the three second highs must be used.

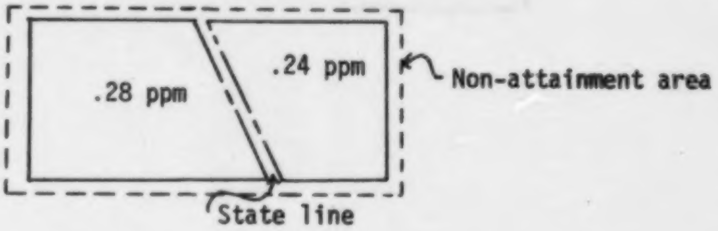
B. Variations with monitor location

1. Monitor siting--Representative monitors are selected using basic guidance from § 51.17. However, where TSP monitors are felt to be unduly influenced by re-entrained road dust and the monitor is not located in accordance with the recent SAMWG guidance (as shown in Figure 2), the concentration given by these monitors need not be used to establish baseline air quality. See Figure (2).

2. Impact of administrative boundaries--Where a non-attainment area is divided into two or more portions because of intervening state boundaries, the baseline air quality will be established on the basis of highest second high value from the entire non-attainment area. See Figure (3).

Figure (3)

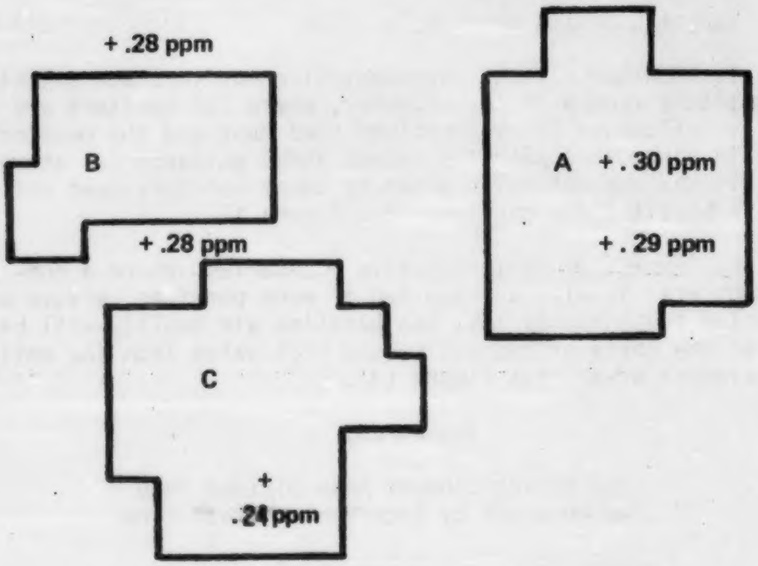
EXAMPLE: One Non-Attainment Area Divided into Two Portions by Intervening State Line



The baseline air quality for both portions of the non-attainment area becomes .28 ppm

3. Overlapping non-attainment areas--where nonattainment areas are so close that there may be considerable transport of oxidant precursors from one to the other, it is frequently difficult to establish the true baseline oxidant air quality. See Figure (4). In such circumstances, the baseline air quality can normally be determined by taking the highest second high within the area of principal influence.

Figure 4.


+ .28 ppm
B
A
+ . 30 ppm
+ .28 ppm
+ . 29 ppm
C
+
.24 ppm

OXIDANT NONATTAINMENT AREAS
IN CLOSE PROXIMITY

Reference to Figure (5) provides one method of predicting the boundaries of the area of principal influence. This curve can be used in estimating the distance from urbanized areas where NO_x approaches undetectable levels. It appears that for smaller urbanized areas and for distances in excess of the indicated radius that the urbanized plume does not maintain its integrity and high precursor concentrations long enough for the formation of photochemical oxidants. For purposes of establishing baseline air quality, a circle (Figure (6)) **may be drawn around the center of an urbanized area using the appropriate radius** taken from the curve in Figure (5).

This procedure will thus enable the user to establish a maximum radius for the area of principal influence surrounding any major urbanized area. Therefore, even when the circles drawn following this procedure do overlap, as in Figure (7), there will still be only one highest second high monitored reading within each circle. That is the reading that should be used in establishing baseline air quality. More detailed information on this subject can be found in the following publication: United States Environmental Protection Agency, Office of Air Quality Planning and Standards; "Effectiveness of Organic Emission Control Programs as a Function of Geographic Location," April 1977.

III. Establishing Baseline Inventory

The format for this inventory has already been fully described.

A. Use 1977 or most recent inventory available

B. All elements of inventory must be in consistent units. Either all NMHC or all total HC.

C. Do not grow the 1977 inventory to date of submittal. This is no more accurate and likely to be much more confusing. See Figure (8).

D. Credit will be allowed for any reduction between 1977 and 1979.

E. The target is a new emission level based on a percentage reduction in 1977 emissions inventory not on a flat reduction in current emissions.

IV. Modeling

A. Use the best model consistent with available resources

B. For non-reactive pollutants

1. These include TSP, SO_2, NO_x*, CO
2. Use AQDM, CDM, CDMQC, or comparable model
3. Use of rollback is not appropriate unless specifically approved by the RA

---

*Actually reactive, but for purposes of this modeling activity it is treated as a non-reactive pollutant.

Figure 5

DISTANCE FROM URBANIZED AREAS WHERE NO_x APPROACHES UNDETECTABLE LEVELS

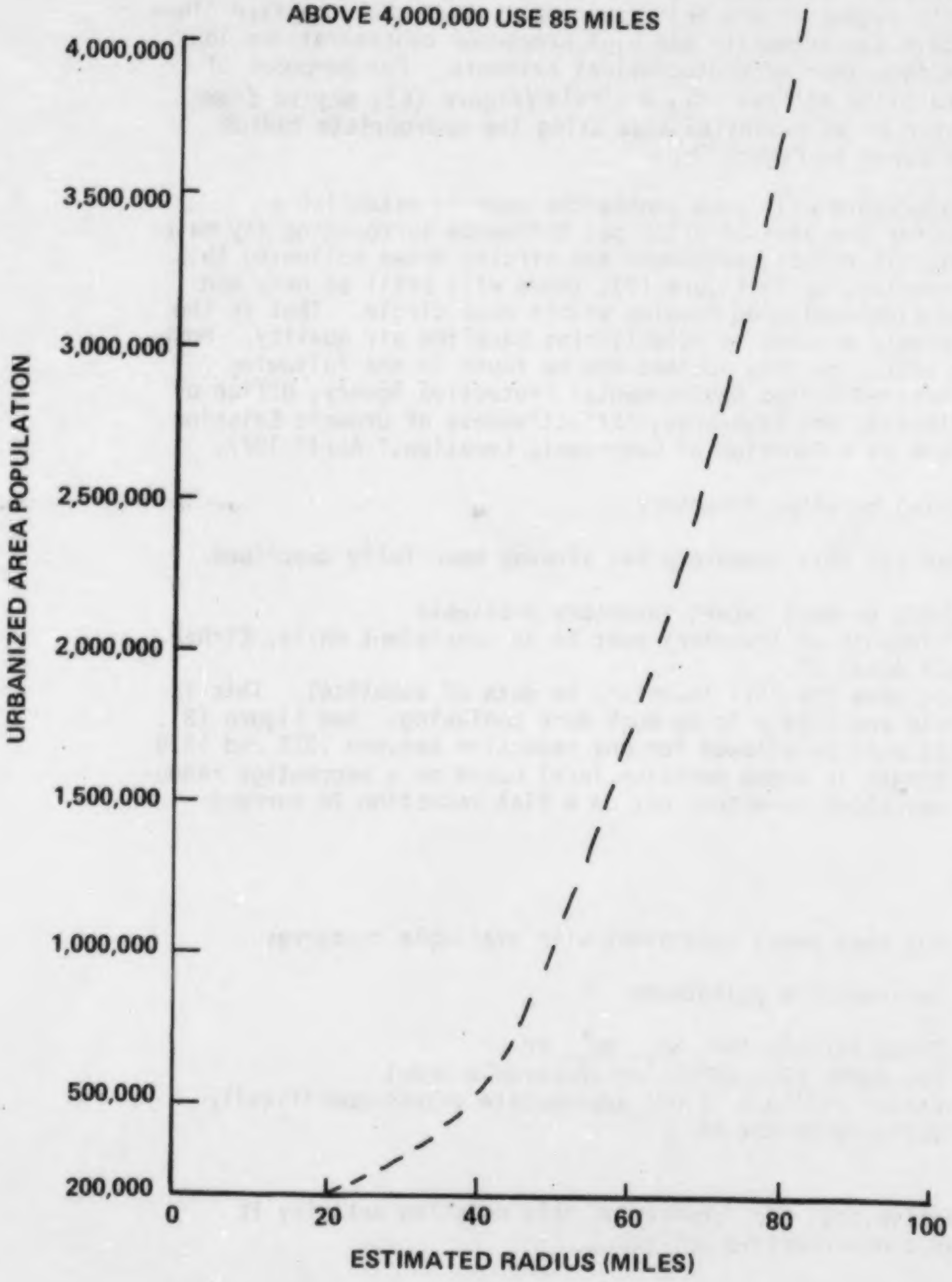
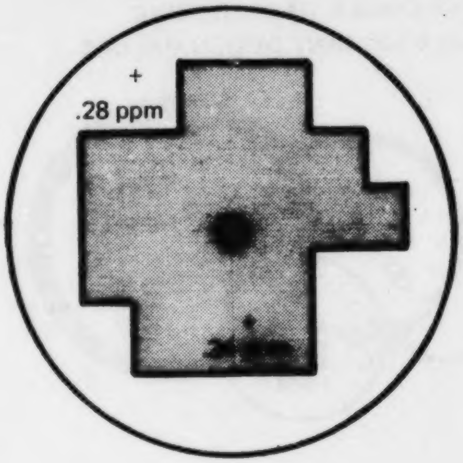


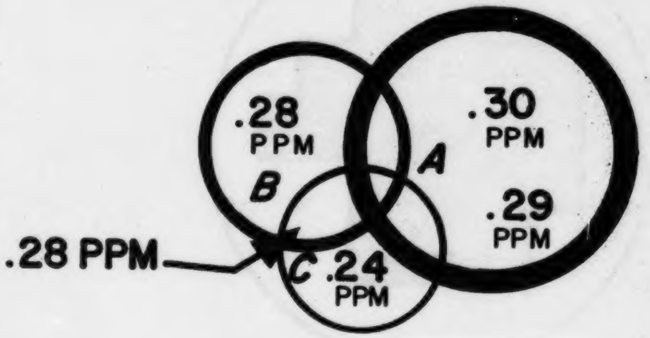
Figure 6.



DRAW CIRCLE OF APPROPRIATE RADIUS AROUND THE CENTER OF THE URBANIZED AREA. SEE FIGURE 7 TO DETERMINE THE APPROPRIATE RADIUS.

Figure 7

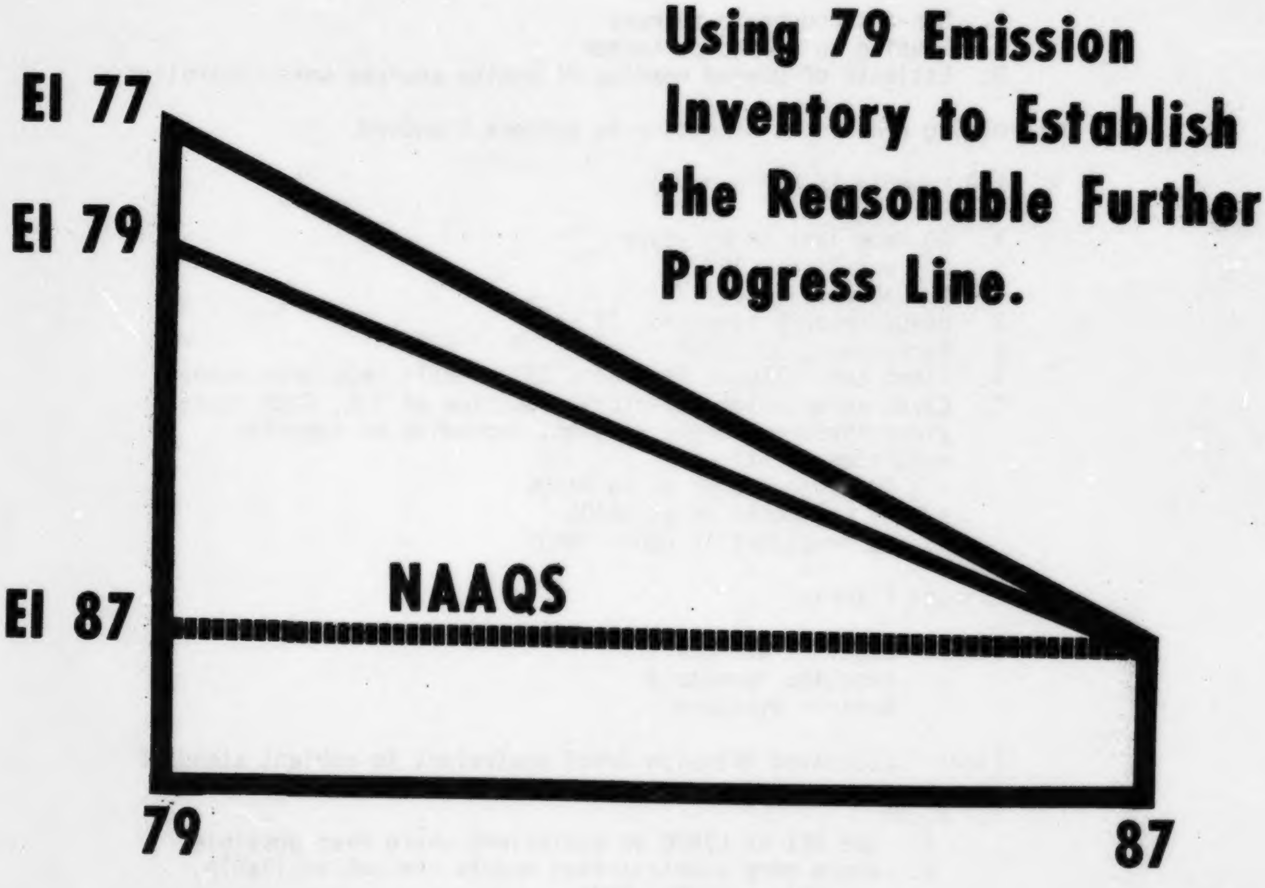
USE OF CIRCLE TO DETERMINE
APPLICABLE OXIDANT DESIGN VALUES


.28
PPM
B
.30
PPM
A
.29
PPM
.28 PPM
C
.24
PPM

A ▬ .30 PPM
B ▬ .28 PPM
C — .28 PPM

USE THE HIGHEST 2nd HIGHEST OXIDANT VALUE
WITHIN THE APPLICABLE CIRCLE

Figure 8



Using 79 Emission Inventory to Establish the Reasonable Further Progress Line.

C. For reactive pollutants--oxidants

1. This relates to HC emissions
2. Use:
   a. SAI, LIRAQ if available
   b. EKMA (Empirical Kinetic Modeling Approach)
   c. Linear rollback and Appendix J (non-linear rollback)

D. When using any rollback model, it is important to select appropriate background levels

1. Non-anthropogenic sources
2. Reading on upwind perimeter
3. Estimate of upwind reading if upwind sources were controlled

V. Determining reductions necessary to achieve standard

A. TSP Example (See Figure 9)

1. AQ from last three years
   a. worst year-1977
   b. AQ was 125 μg/m³
2. NAAQS primary standard, 75 μg/m³
3. Background, 30 μg/m³
4. First cut rollback indicates 53% overall reduction needed
5. Given an emission inventory reduction of 53%, AQDM could yield three different results, depending on specific reduction locations
   a. AQ projected is below NAAQS
   b. AQ projected is at NAAQS
   c. AQ projected is above NAAQS

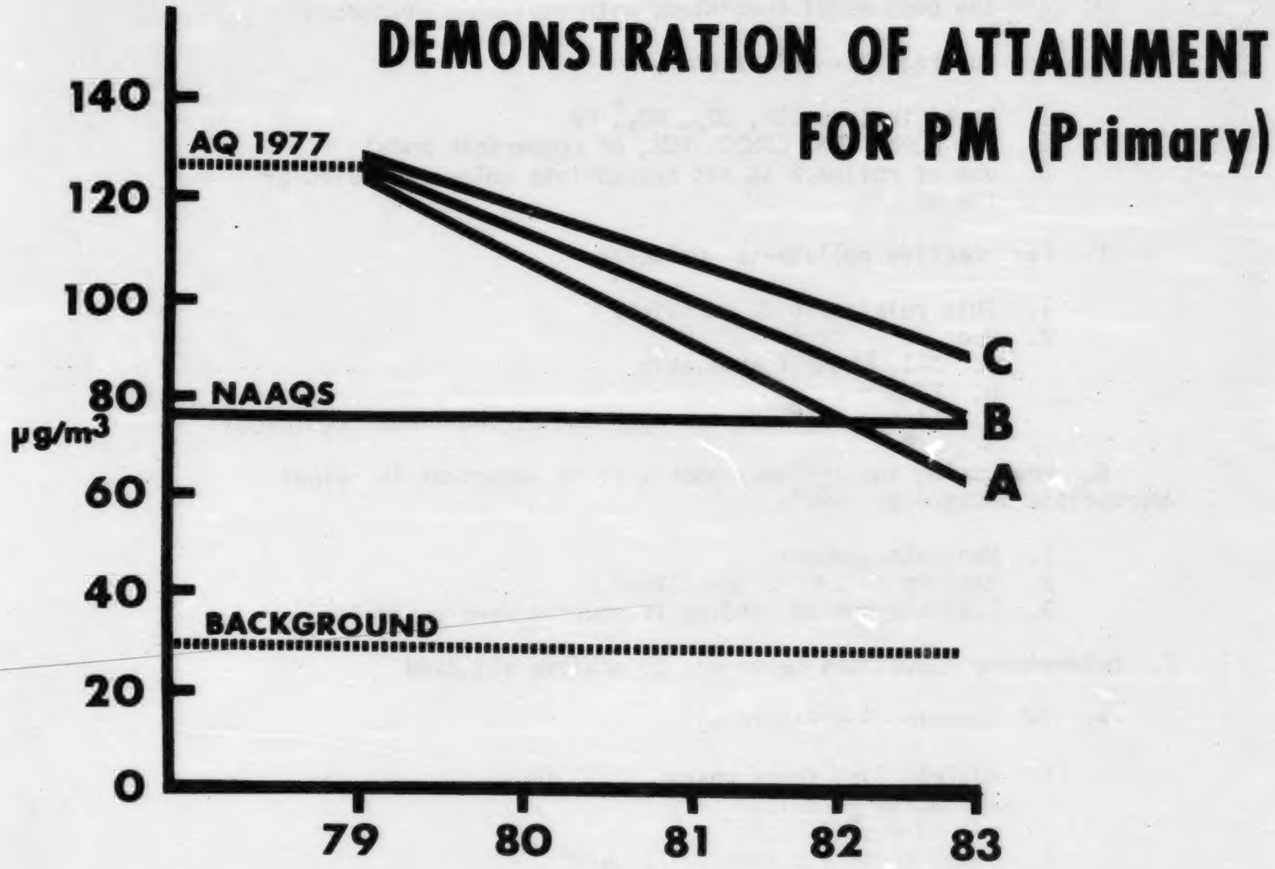
B. Oxidant Example

Given: Baseline air quality
Baseline inventory
Ambient standard

Find: Estimated emission level equivalent to ambient standard

1. Model
   a. Use SAI or LIRAQ or equivalent where ever possible
   b. Where more sophisticated models are not available, use city specific EKMA
   c. Where city-specific EKMA is not available, use the standard isopleth version of EKMA
   d. Rollback

Figure 9


DEMONSTRATION OF ATTAINMENT FOR PM (Primary)
140
120
100
80
60
40
20
0
μg/m³
AQ 1977
NAAQS
BACKGROUND
C
B
A
79
80
81
82
83

E. The target is an emission level based on a percentage reduction in 1977 emissions inventory not on a flat reduction in current emissions.

IV. Modeling

A. Use the best model consistent with available resources

B. For non-reactive pollutants

1. These include TSP, SO_2, NO_x*, CO
2. Use AQDM, CDM, CDMQC, TCM, or comparable model
3. Use of rollback is not appropriate unless approved by the RA

C. For reactive pollutants--oxidants

1. This relates to HC emissions
2. Use:
   a. SAI, LIRAQ if available
   b. EKMA
   c. Linear rollback and Appendix J (non-linear rollback)

D. When using any rollback model, it is important to select appropriate background levels

1. Non-anthropogenic
2. Reading on upwind perimeter
3. Estimate upwind reading if sources were controlled

V. Determining reductions necessary to achieve standard

A. TSP Example (See Figure 6)

1. AQ from last three years
   a. worst year-1977
   b. AQ was 125 $\mu g/m^3$
2. NAAQS primary standard, 75 $\mu g/m^3$
3. Background, 30 $\mu g/m^3$
4. First cut rollback indicates 53% overall reduction needed
5. Using emissions inventory reduced by 53% and AQDM, three cases can result
   a. AQ projected is below NAAQS
   b. AQ projected is at NAAQS
   c. AQ projected is above NAAQS

---

*Actually reactive but for purposes of this modeling activity, it is treated as a non-reactive pollutant.

2. Adjusting for Background and Transport (See Figures 11 & 12)
   a. Additivity (A)--normally between 20% and 70% (That portion of background concentration which is not scavenged and therefore contributes to the urban oxidant problem)
   b. Natural background--.02-.06 ppm
   c. Man-made background
   d. Reducible transport --original transport (T_0) minus final transport (T_F)
   e. Adjusted air quality

AQ adjusted = AQ design - A (reducible transport)

$$.24 = .28 - .50(.12-.04)$$

3. Adjusting for background and transport using linear rollback

$$\frac{\text{AQ adjusted} - .08}{\text{AQ adjusted} - \text{A (final transport)}}$$

$$\frac{.24 - .08}{.24 - .50\ (.04)}$$

$$\frac{.16}{.22} = 73\%\ \text{reduction}$$

4. Calculate required reductions

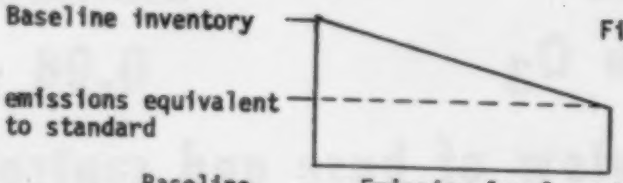
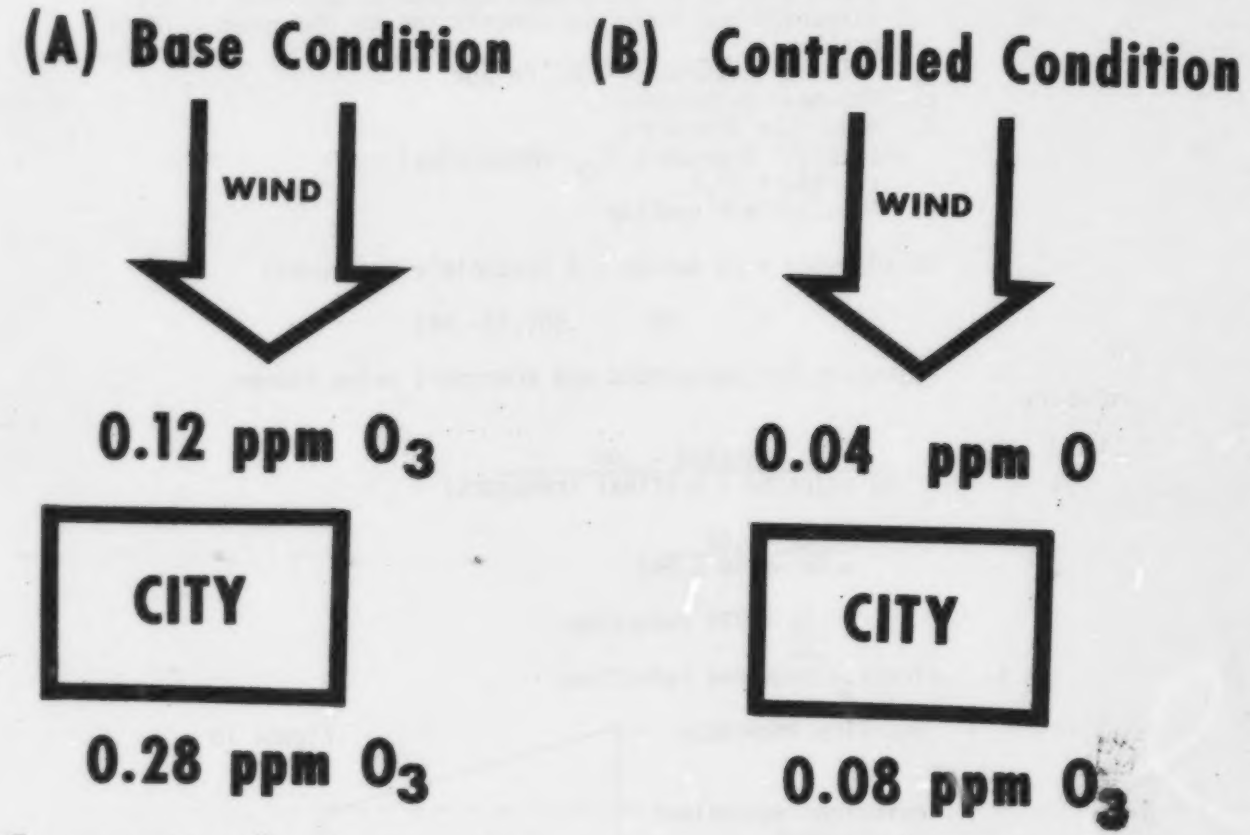


Figure 10

$$\text{Average additional control required} = \frac{\text{Baseline inventory} - \text{Emission level equivalent to standard}}{\text{Baseline inventory}}$$

More detailed information on this subject can be found in the following publication: EPA, Uses, Limitations and Technical Basis of Procedures for Quantifying Relationships between Photochemical Oxidants and Precursors, EPA-450/2-77-021a, November 1977.

Figure 11


(A) Base Condition
(B) Controlled Condition
WIND
WIND
0.12 ppm O_3
0.04 ppm O
CITY
CITY
0.28 ppm O_3
0.08 ppm O_3

Conceptual view of base and controlled states

Shoot 2x
& cut in O_3
on Top Right

Figure 12

ADJUSTING FOR TRANSPORT

1. ADDITIVITY (A)

   NORMALLY BETWEEN 20% and 70%

2. NATURAL BACKGROUND

   .02 --.06ppm

3. MAN MADE BACKGROUND

4. REDUCIBLE TRANSPORT

   ORIGINAL TRANSPORT (T_O) MINUS FINAL TRANSPORT (T_F)

AQ ADJUSTED = AQ DESIGN – A (REDUCIBLE TRANSPORT)

.24 = .28 – .50 (.12 – .04)

Definition of RACT

REASONABLY AVAILABLE CONTROL TECHNOLOGY

I. REQUIREMENTS
  A. SECTION 172 (b) (2) OF THE CLEAN AIR ACT

II. APPLICABILITY OF DISCUSSION
  A. RACT
  B. STRINGENT BUT REASONABLE MEASURES

RACT

"THE LOWEST EMISSION LIMIT THAT A PARTICULAR SOURCE IS CAPABLE OF MEETING BY THE APPLICATION OF CONTROL TECHNOLOGY THAT IS REASONABLY AVAILABLE CONSIDERING TECHNOLOGICAL AND ECONOMIC FEASIBILITY"

III. DEFINITION OF RACT

A. TECHNICALLY FEASIBLE

B. ECONOMICALLY FEASIBLE

C. APPENDIX B, 40 CFR PART 51 DOES NOT REPRESENT RACT

IV. TECHNOLOGICAL FEASIBILITY

A. STRINGENT, EVEN "TECHNOLOGY FORCING"

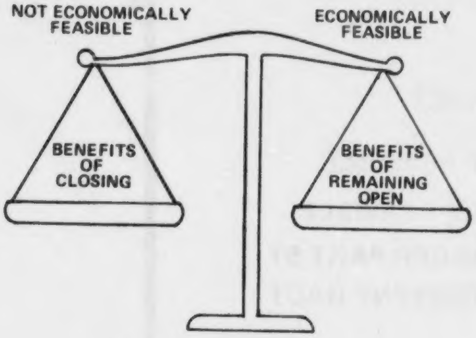
B. SIMILARITY OF SOURCES

V. ECONOMIC FEASIBILITY

A. SOURCE SPECIFIC

B. ECONOMIC WEIGHING OF BENEFITS

C. PRESENT VALUE ANALYSIS


NOT ECONOMICALLY FEASIBLE
ECONOMICALLY FEASIBLE
BENEFITS OF CLOSING
BENEFITS OF REMAINING OPEN

VI. TYPES OF INFORMATION AVAILABLE

A. NEW SOURCE PERFORMANCE STANDARD (NSPS) SUPPORT DOCUMENTS
B. NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) SUPPORT DOCUMENTS
C. CONTROL TECHNIQUE DOCUMENTS FOR SPECIFIC POLLUTANTS
D. EXISTING STATE AND FEDERAL REGULATIONS
E. CONTROL TECHNOLOGY GUIDELINE DOCUMENTS FOR VOC.

VII. CONTROL TECHNIQUES GUIDELINE DOCUMENTS FOR VOC SOURCES

A. CURRENTLY 10 DOCUMENTS

B. STAGE I GASOLINE TRANSFER

C. REGULATIONS SUBMITTED BY JAN. 1979

CONTROL TECHNOLOGY GUIDANCE DOCUMENTS FOR
STATIONARY SOURCES OF VOLATILE ORGANIC
COMPOUNDS

VIII. EMISSION LIMITATIONS

A. PRESUMPTIVE RACT

SUMMARY OF RECOMMENDED EMISSION LIMITATIONS FOR STATIONARY VOC SOURCES

VIII. EMISSION LIMITATIONS con't

- B. JUSTIFICATION REQUIRED FOR DEVIATION
- C. MOBILE SOURCES
- D. ATTAINMENT IS THE OVERRIDING CONCERN
- E. RACT REQUIRED FOR ATTAINMENT DATE EXTENSION FOR CO & OXIDANT

SUMMARY OF POSSIBLE PERCENT EMISSION REDUCTIONS FROM RTCMs

IX. FORM OF THE REGULATION

- A. VARY FROM ADD ON CONTROL EQUIPMENT TO PROCESS CHANGES
- B. QUANTIFICATION OF EMISSIONS ON A TIME BASIS IS REQUIRED IN THE INVENTORY

X. CLEARING HOUSE

A. OAQPS WILL PROVIDE ASSISTANCE
B. RACT, BACT, LAER DETERMINATIONS
C. UNUSUAL CIRCUMSTANCES

XI SUMMARY:

- ◆ RACT MUST BE TECHNICALLY AND ECONOMICALLY FEASIBLE
- ◆ TECHNICAL FEASIBILITY CAN REQUIRE STRINGENT AND EVEN "TECHNOLOGY FORCING" CONTROL MEASURES.
- ◆ PRESENT VALUE ANALYSIS IS THE RECOMMENDED METHOD FOR DETERMINING ECONOMIC FEASIBILITY
- ◆ THERE ARE NUMEROUS SOURCES OF INFORMATION TO ASSIST STATES IN DETERMINING STRINGENT YET REASONABLE CONTROLS.
- ◆ CONTROL TECHNIQUES GUIDELINES HAVE BEEN ISSUED FOR A NUMBER OF VOLATILE ORGANIC COMPOUND SOURCE CATEGORIES
- ◆ RACT IS REQUIRED FOR AN EXTENSION TO 1987 TO BE GRANTED FOR CO AND/OR OXIDANT PLANT PLANS.

REASONABLY AVAILABLE CONTROL TECHNOLOGY
(RACT)

I. Requirements

  A. Section 172(b)(2) of the Clean Air Act states the requirements for implementation of RACT.

II. Applicability of Discussion

  A. Discussion deals with determination of RACT.

  B. Information to be presented also applies to the determination of any stringent yet reasonable measure.

III. Definition of RACT

  A. Definition of RACT is found in a December 9, 1976, memorandum from the Assistant Administrator of OAWM.

  B. RACT - the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

  C. Two key points

    * Technical Feasibility
    * Economic Feasibility

  D. Appendix B, 40 CFR Part 51 no longer represents RACT.

IV. Technological Feasibility

  A. Requires stringent and even "technology forcing" control measures.

  B. Equipment need not be applied to an identical source only to a similar source to represent RACT.

V. Economic Feasibility

  A. Economic feasibility may be very source specific.

  B. Economic feasibility depends upon the weighing of the benefits of remaining open against those of closing.

  C. Present value analysis is the recommended procedure for determining economic feasibility.

VI. Types of Information Available

A. New Source Performance Standards documents (SSEIS)

B. National Emission Standards for Hazardous Air Pollutants (NESHAPS)

C. Control Techniques documents for specific pollutants.

D. Existing State and Federal regulations should be considered the minimum achievable level of control for each individual State.

E. Control Technology Guideline Documents for Volatile Organic Compounds.

VII. Control Technology Guideline (CTG) Documents for Sources of Volatile Organic Compounds (VOC)

A. There are currently 11 CTGs available (see appended list).

B. Bulk storage gasoline transfer - Stage I

C. Regulation for these 12 sources must be submitted in January, 1979, if extension beyond 1982 is necessary.

VIII. Emission Limitations

A. EPA has issued presumptive values for several sources. These represent the norm achievable by industry.

B. While it is recognized that RACT will be determined on a case-by-case basis, the criteria for SIP approval will rely heavily upon the information contained in CTG. Deviations from the use of CTG should be adequately documented.

C. Reasonably available control measures for mobile sources have been discussed in the presentation on Transportation Related Issues.

D. It should be noted that attainment of the particular National Ambient Air Quality Standard is the overriding concern.

E. Full application of all RACM (RACT, RTCM) will be required for extension of the attainment date to 1987 for CO and photochemical oxidant.

IX. Form of the Regulation

A. The form of the regulations will vary from add on control technology to process changes.

B. A quantification of the emissions on a time basis is required by the inventory.

X. Clearinghouse

A. OAQPS will provide assistance in the determination of achievable levels of control.

B. This assistance will be in the form of RACT, BACT, LAER determinations.

C. This assistance should only be requested for unusual circumstances where the agency does not have the in-house expertise or in a situation where a State desires to know what another State has done in defining RACT, BACT, LAER for a particular source.

D. Summary of determinations made to date, with appropriate updates, will be provided on a periodic basis to the Regional Offices and State and local agencies.

XI. Summary

A. RACT must be technically and economically feasible.

B. Technical feasibility can require stringent and even "technology forcing" control measures.

C. Present value analysis is the recommended method for determining economic feasibility.

D. There are numerous sources of information to assist States in determining stringent yet reasonable controls.

E. Control techniques guidelines have been issued for a number of VOC source categories.

F. RACT is required for an extension to 1987 to be granted for CO and/or oxidant plans.

CONTROL TECHNOLOGY GUIDANCE DOCUMENTS FOR STATIONARY SOURCES OF VOLATILE ORGANIC COMPOUNDS

GROUP I	DATE OF ISSUANCE	DATE OF SUBMITTAL
Large Appliance Manufacture	December 1977	January 1979
Magnet Wire Insulation	December 1977	January 1979
Gasoline Bulk Plants	December 1977	January 1979
Metal Furniture Manufacture	December 1977	January 1979
Petroleum Liquid Storage, Fixed Roof Tanks	December 1977	January 1979
Degreasing	October 1977	January 1979
Bulk Gasoline Terminals	October 1977	January 1979
Petroleum Refinery Vacuum Systems, Waste Water Separators and Process Unit Turnaround	October 1977	January 1979
Service Stations, Stage I	Documentation has been widely distributed	January 1979
Cutback Asphalt Paving	October 1977	January 1979
Surface Coating of Cans, Coils, paper,fabric, automobiles and Light-duty trucks	May 1977	January 1979

CONTROL TECHNOLOGY GUIDANCE DOCUMENTS FOR STATIONARY SOURCES OF VOLATILE ORGANIC COMPOUNDS

GROUP II	DATE OF ISSUANCE	DATE OF SUBMITTAL
Petroleum Refinery Fugitive Emissions (leaks)	June 1978	January 1980
Surface Coating of Other Metal Products - Industrial	June 1978	January 1980
Pharmaceutical Manufacture	June 1978	January 1980
Rubber Products Manufacture	June 1978	January 1980
Paint Manufacture	June 1978	January 1980
Vegetable Oil Processing	June 1978	January 1980
Graphic Arts (Printing)	June 1978	January 1980
Flat Wood Products	June 1978	January 1980
Service Stations, Stage II	June 1978	January 1980
Petroleum Liquid Storage Floating Roof Tanks	June 1978	January 1980
GROUP III		
Ship and Barge Transport of Gasoline and Crude Oil	December 1978	January 1980
Organic Chemical Manufacture		
Process Streams	December 1978	January 1980
Fugitive (Leaks)	December 1978	January 1980
Dry Cleaning	December 1978	January 1980
Wood Furniture Manufacture	December 1978	January 1980
Architectural and Miscellaneous Coatings	December 1978	January 1980
GROUP IV		
Organic Chemical Manufacture		
Waste Disposal	June 1979	January 1981
Storage and Handling	June 1979	January 1981
OTHERS		
Natural Gas and Crude Oil Production		
Adhesives		
Other Industrial Surface Coatings		
Auto Refinishing		
Other Solvent Usage		

SUMMARY OF RECOMMENDED EMISSION LIMITATIONS
FOR STATIONARY VOC SOURCES

	Recommended Limitation
Surface Coating	
Can Coating	
Sheet basecoat Two-piece can exterior	0.34 kg/l of coating (minus water)
Two- & three-piece can interior body spray	0.51 kg/l of coating (minus water)
Two-piece end exterior	
Side-seam spray	0.66 kg/l of coating (minus water)
End sealing compound	0.44 kg/l of coating (minus water)
Coil Coating	0.31 kg/l of coating (minus water)
Fabric Coating	0.35 kg/l of coating (minus water)
Vinyl Coating	0.45 kg/l of coating (minus water)
Paper Coating	0.35 kg/l of coating (minus water)
Auto & Light Duty Truck Coating	
Prime	0.23 kg/l of coating (minus water)
Topcoat	0.34 kg/l of coating (minus water)
Repair	0.58 kg/l of coating (minus water)
Metal Furniture Coating	0.36 kg/l of coating (minus water)
Magnet Wire Coating	0.20 kg/l of coating (minus water)
Large Appliance Coating	0.34 kg/l of coating (minus water)
Bulk Gasoline Terminal Truck Loading	80 mg/l of gasoline loaded
Bulk Gasoline Plants	

Storage Tank Filling	Vapor balance system
Truck Loading	Vapor balance system
Service Stations	
Storage Tank Filling (Stage I)	Vapor balance system
Fixed-Roof Storage of Petroleum Liquids	Internal floating roofs
Petroleum Refining	
Vacuum Systems	Vent noncondensables to boiler/ heater firebox
Wastewater Separators	Install tight covers over separators
Process Unit Turnarounds	Vent gases to a flare or other combustion device during depressurization
Cutback Asphalt Paving	Substitute water emulsions for solvent cutback asphalt applications
Degreasing	Combination of control equipment and operating requirements to minimize solvent evaporation and solvent carryout. Requirements differ for cold cleaners, open top vapor degreasers and conveyorized degreasers.

SUMMARY OF POSSIBLE
PERCENT EMISSION REDUCTIONS FROM
RTCMs

MEASURES	% Emission Reduction
Inspection/maintenance	
Vapor recovery	
Improved public transit	
Exclusive bus and carpool lanes	
Areawide carpool programs	
Private car restrictions	
Long-range transit improvements	
On-street parking controls	
Park and ride and fringe parking lots	
Pedestrian malls	
Employer programs to encourage car and van polling, mass transit, bicycling and walking	
Bicycle lanes and storage facilities	
Staggered work hours	
Road pricing to discourage single occupancy auto trips	
Controls on extended vehicle idling	
Traffic flow improvements	
Alternative fuels or engines and other fleet vehicle controls	
Other than light duty vehicle retrofit	
Extreme cold start emission reduction programs	

REFERENCES

Final CTGs documents as of 1-1-78

Control of Volatile Organic Emissions from Existing Stationary Sources Volume V: Surface Coating of Large Appliances - EPA-450/2-77-034.

Control of Volatile Organic Emissions from Existing Stationary Sources Volume IV: Surface Coating for Insulation of Magnet Wire - EPA-450/2-77-033.

Control of Volatile Organic Emissions from Bulk Gasoline Plants - EPA-450/2-77-035.

Control of Volatile Organic Emissions from Existing Stationary Sources Volume III: Surface Coating of Metal Furniture - EPA-450/2-77-032.

Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks - EPA-450/2-77-036.

Control of Volatile Organic Emissions from Solvent Metal Cleaning - EPA-450/2-77-022.

Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals EPA-450/2-77-026.

Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds - EPA-450/2-77-025.

Control of Volatile Organic Compounds from Use of Cutback Asphalt.

Control Volatile Organic Emissions from Existing Stationary Sources Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks - EPA-450/2-77-008.

Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations.

Control of Volatile Organic Emissions from Existing Stationary Sources Volume I: Control Methods for Surface-Coating Operations EPA-450/2-76-028

EPA 450/2-73-002	A Technique for Calculating Overall Efficiencies of Particulate Control Devices. 8/73.
EPA 450/2-74-002A	Background Information for New Source Performance Standards: Primary Copper, Zinc, and Lead Smelters. Vol. 1 - Proposed Standards. 10/74.
EPA 450/2-74-008	Air Pollution Control Engineering and Cost Study of the Ferroalloy Industry. 5/74.
EPA 450/2-74-009A	Background Information on National Emission Standards for Hazardous Air Pollutants, Proposed Amendments to Standards for Asbestos and Mercury. 10/74.
EPA 450/2-74-017A	Background Information for Standards of Performance: Electric Arc Furnaces in the Steel Industry. Vol. 1 - Proposed Standards. 10/74.
EPA 450/2-74-017B	Background Information for Standards of Performance: Electric Arc Furnaces in the Steel Industry.
EPA 450/2-74-018A	Background Information for Standards of Performance: Electric Submerged Arc Furnaces Producing Ferroalloys. Vol. 1: Proposed Standards. 10/74.
EPA 450/2-74-018B	Background Information for Standards of Performance: Electric Submerged Arc Furnaces for Production of Ferroalloys. Vol. 2: Test Data Summary. 10/74.
EPA 450/2-74-018C	Background Information for Standards of Performance - Electric Submerged Arc Furnaces for Production of Ferroalloys. Vol. 3 - Supplemental Information. 4/75.
EPA 450/2-74-019A	Background Information for Standards of Performance: Phosphate Fertilizer Industry. Vol. 1 - Proposed Standards. 10/74.
EPA 450/2-74-019B	Background Information for Standards of Performance: Phosphate Fertilizer Industry. Vol. 2: Summary of Test Data. 10/74.
EPA 450/2-74-020A	Background Information for Standards of Performance: Primary Aluminum Plants. Vol. 1 - Proposed Standards. 10/74.
EPA 450/2-74-020B	Background Information for Standards of Performance: Primary Aluminum Plants. Vol. 2: Summary of Test Data. 10/74.

EPA 450/2-74-020C	Background Information for Standards of Performance: Primary Aluminum Industry. Vol. 3 - Supplemental Information. 1/76.
EPA 450/2-74-021A	Background Information for Standards of Performance: Coal Preparation Plants. Vol. 1: Proposed Standards. 10/74.
EPA 450/2-74-021B	Background Information for Standards of Performance: Coal Preparation Plants. Vol. 2 - Summary of Test Data. 10/74.
EPA 450/2-74-021C	Background Information for Standards of Performance: Coal Preparation Plants. Vol. 3 - Supplemental Information. 1/76.
EPA 450/2-75-009	Standard Support and Environmental Impact Statement - Emission Standard for Vinyl Chloride. 10/75.
EPA 450/2-75-009B	Standard Support and Environmental Impact Statement: Volume 2 Promulgated Emission Standard for Vinyl Chloride. 1976.
EPA 450/2-76-002	State Implementation Plan Emission Regulations for Sulfur Oxides - Fuel Combustion. 3/76.
EPA 450/2-76-012	Field Evaluation of Red Jacket Vapor Control System. 1976.
EPA 450/2-76-014A	Standard Support and Environmental Impact Statement: Vol. 1 Proposed Standards of Performance for Kraft Pulp Mills. 1976.
EPA 450/2-76-016A	Standards Support and Environmental Impact Statement: Vol. 1 Proposed Standards of Performance for Petroleum Refinery Sulfur Recovery Plants. 1976.
EPA 450/2-76-028	Control of Volatile Organic Emissions from Existing Stationary Sources: Vol. 1 - Control Methods for Furface Coating Operation. 1976.
EPA 450/2-76-030A	Standards Support and Environmental Impact Statement: Vol. 1 - Proposed Standard of Performance for Lignite-Fired Steam Generators. EPA: OAQPS 1976.
EPA 450/2-77-001A	Standards Support and Environmental Impact Statement: Vol. 1 - Proposed Standards of Performance for the Grain Elevator Industry. EPA: OAQPS 1977

EPA 450/2-77-005	Control of Fluoride Emissions from Existing Phosphate Fertilizer Plants: Final Guideline Document. EPA: OAQPS 1977.
EPA 450/2-77-007A	Standards Support and Environmental Impact Statement: Vol. 1 - Proposed Standards of Performance for Lime Manufacturing Plants. EPA: OAQPS 1977.
EPA 450/2-77-008	Control of Volatile Organic Emissions from Existing Stationary Sources: Vol. II - Surface Coating of Cans, Coils, Paper, Fabric, Automobiles and Light Duty Trucks. EPA: OAQPS 1977.
EPA 450/2-77-017A	Standards Support and Environmental Impact Statement: Vol. 1 - Proposed Standards of Performance for Stationary Gas Turbines. EPA: OAQPS 1977.
EPA 450/2-77-019	Final Guideline Document: control of Sulfuric Acid Mist Emissions from Existing Sulfuric Acid Production Units. EPA: OAQPS 1977.
EPA 450/2-77-022	Control of Volatile Organic Emissions from Solvent Metal Cleaning.
EPA 450/2-77-025	Control of Refinery Vacuum Producing Systems - Wastewater Separators: Process Unit Turnarounds.
EPA 450/2-77-026	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals
EPA 450/2-77-032	Control of Volatile Organic Emissions - Surface Coating Vol. III.
EPA 450/2-77-033	Control of Volatile Organic Emissions - Magnetic Wire Vol. 4
EPA 450/3-73-003A	Emissions Control in the Grain and Feed Industry, Vol. 1. Engineering and Cost Study. 12/73. Midwest Research Inst. 1973.
EPA 450/3-73-003B	Emissions Control in the Grain and Feed Industry. Vol. 2. Emission Inventory. 9/74. Midwest Research Inst. 1974.
EPA 450/3-73-004A	Air Pollution Control in the Primary Aluminum Industry. Vol. 1 of 2 (Sections 1 through 10). 7/73. Singmaster and Breyer. 1973.

EPA 450/3-73-004B	Air Pollution Control in the Primary Aluminum Industry. Vol. 2 of 2 (appendices). 7/73.
EPA 450/3-74-002	Evaluation of the Controllability of Power Plants Having a Significant Impact on Air Quality Standards. 2/74.
EPA 450/3-74-015	Factors Affecting Ability to Retrofit Flue Gas Desulfurization Systems. 12/73. Radian Corp. 1973.
EPA 450/3-74-036A	Investigation of Fugitive Dust: Vol. I - Sources, Emissions, and Control. PEDCo Env. Specialists. 1974.
EPA 450/3-74-036B	Investigation of Fugitive Dust: Vol. II - Control Strategy and Regulatory Approach. PEDCo Env. Specialists. 1974.
EPA 450/3-74-060	Air Pollution Control Technology and Costs - Seven Selected Emission Factors. 12/74. Indust. Gas Cleaning Inst. 1974.
EPA 450/3-74-063	Particulate Emission Control Systems for Oil-Fired Boilers. 12/74. Geomet. 1975
EPA 450/3-75-046A	A Study of Vapor Control Methods for Gasoline Marketing Operations. Vol. 1 - Industry Sruvey and Control Techniques. 4/75. Radian Corp. 1975.
EPA 450/3-75-046B	A Study of Vapor Control Methods for Gasoline Marketing Operations. Vol. 2 - Appendix. 4/75. Radian Corp. 1975.
EPA 450/3-75-047	Comparison of Flue Gas Desulfurization Coal Liquefaction and Coal Gasification for Use at Coal-Fired Power Plants. Kellogg MS Co. 1975.
EPA 450/3-76-005	Control of Particulate Matter from Oil Burners and Boilers. Aerotherm Corp. 1976.
EPA 450/3-76-013	Cost of Retrofitting Coke Oven Particulate Controls. Vulcan Cincinnati. 1974.
EPA 450/3-76-036	Evaluation of Methods for Measuring and Controlling Hydrocarbon Emissions from Petroleum Storage Tanks. Battelle Memorial Inst. 1976.
EPA 450/3-76-038A	Background Information on Hydrocarbon Emissions from Marine Terminal Operations: Vol. I - Discussion. Radian Corp. 1976.

EPA 450/3-76-038B	Background Information on Hydrocarbon Emissions from Marine Terminal Operations: Volume II - Appendices Radian Corp. 1976.
EPA 450/3-76-042	Economic Impact of Stage II Vapor Recovery Regulations: Working Memoranda. Little Ad. 1976.
EPA 450/3-77-010	Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions. PEDCo Env. Specialists. 1977.
EPA 450/3-77-026	Atmospheric Emissions from Offshore Oil and Gas Development and Production. Energy Resources Co. 1977.
EPA 450/3-77-046	Screening Study to Determine Need for SO_x and Hydrocarbon NSPS for FCC Regenerators.

Public Participation and Intergovernmental Consultation

The presentation on public participation and intergovernmental consultation at the actual workshops did not include the use of visual material or written text. The presentation covered material that was still under development and will be the subject of forthcoming regulations. Readers are advised to consult those regulations when they appear for a fuller treatment of the material. Therefore, no visual or text materials on public participation and intergovernmental consultation are presented here.

The discussion on public participation and intergovernmental consultation covered the following section of the Clean Air Act: 121, 172(b)(1) and (9), 174, and 175.

Reasonable Further Progress

REASONABLE FURTHER PROGRESS (RFP)

AND

NEW SOURCE REVIEW (NSR)

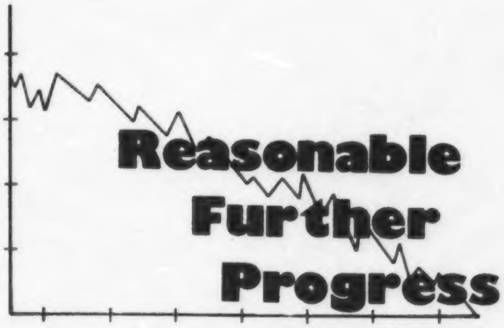
- MECHANISMS TO ENSURE ATTAINMENT
- FEEDBACK TO AVOID SANCTIONS

RFP

- 2 Part Process
  - Schedule development
  - Yearly Tracking
- Important Role
  - Adjustments to Strategy and NSR

NSR

- Instantaneous RFP
- Additional Cleanup
- New Technology



Reasonable Further Progress

RFP

PART D REQUIREMENTS

171(a) DEFINITION

- Annual Incremental Reductions
- Substantial Early Reductions
  —Regular Thereafter
- Provides for Attainment

172(b)(3) PLAN REQUIREMENT

- Require RFP Including RACT

173 (1) NSR Permits

- Consistent With RFP

IMPORTANCE OF RFP

IF PROBLEMS IDENTIFIED:

- NEW RFP SCHEDULE
- NEW ATTAINMENT DEMONSTRATION
- AMENDED NONATTAINMENT DESIGNATION
- EI ADJUSTMENTS

IMPORTANCE OF RFP

IF PROBLEMS IDENTIFIED: cont.

- ADDITIONAL REQUIREMENTS
- INCREASED ENFORCEMENT
- NSR STRATEGY AMENDED
- GROWTH SANCTIONS IMPOSED

RFP SCHEDULES

USED FOR TRACKING EI CHANGES

GENERAL :

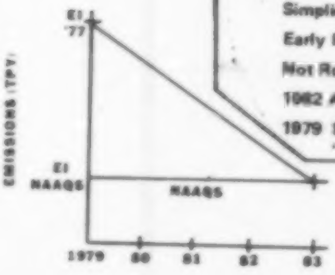
PRIMARY STANDARDS – AEAP

SECONDARY STANDARDS – REASONABLE TIME

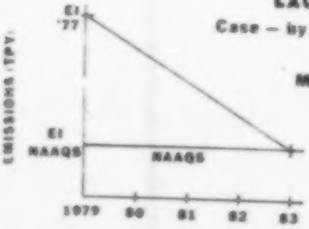
SHORT-TERM VIOLATIONS – SELECTIVE EI
(TSP, SO_2 – ONLY)

POST '82 SIP's - RACM, FMVCP

RFP SCHEDULES



LINEAR PRESUMPTION
- Simpliest Design
- Early Reductions
- Not Rollback
- 1982 Attainment
- 1979 Submittal – Initially

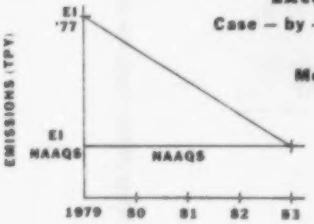


Exceptions to Linear

Case – by – case determinations
–RA and State
More resource intensive

Exceptions to Linear

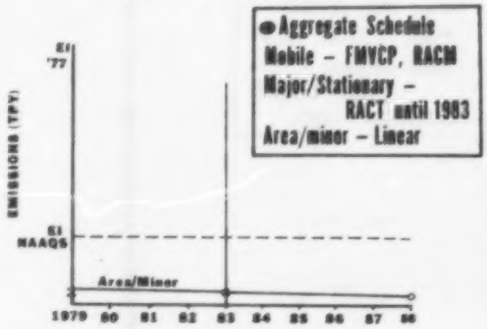
Case – by – case determinations
–RA and State
More resource intensive



EXAMPLES:

- Post '82 SIP's
- Secondary NAAQS
- Special cases

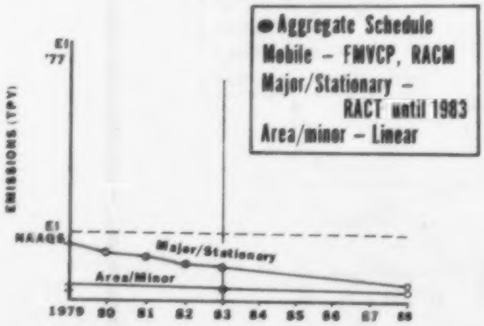
POST '82 SIP'S / AGGREGATE RFP



- Aggregate Schedule

Mobile – FMVCP, RACM
Major/Stationary –
RACT until 1983
Area/minor – Linear

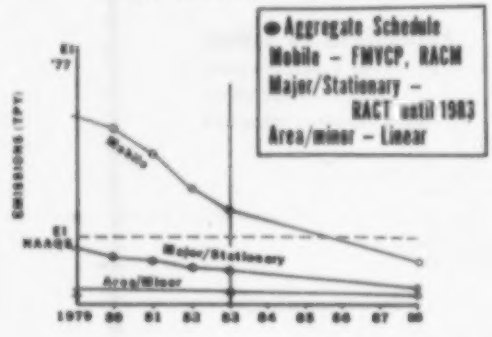
POST '82 SIP'S / AGGREGATE RFP



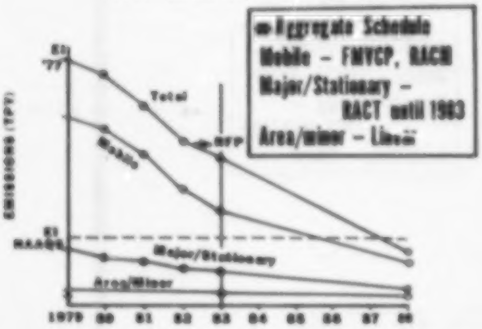
- Aggregate Schedule

Mobile – FMVCP, RACM
Major/Stationary –
RACT until 1983
Area/minor – Linear

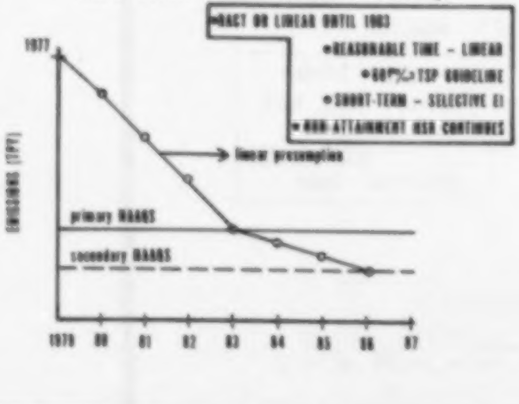
POST '82 SIP'S / AGGREGATE RFP



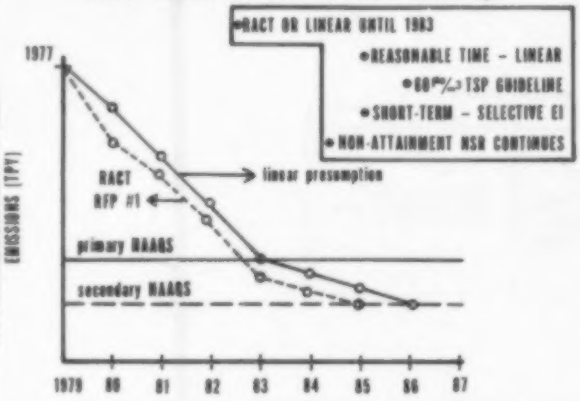
POST '82 SIP'S / AGGREGATE RFP



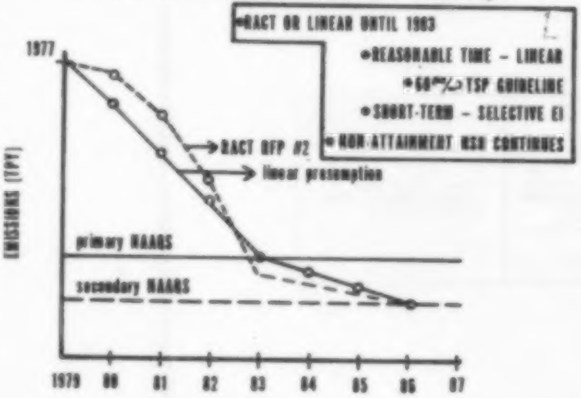
RFP AND SECONDARY NAAQS



RFP AND SECONDARY NAAQS



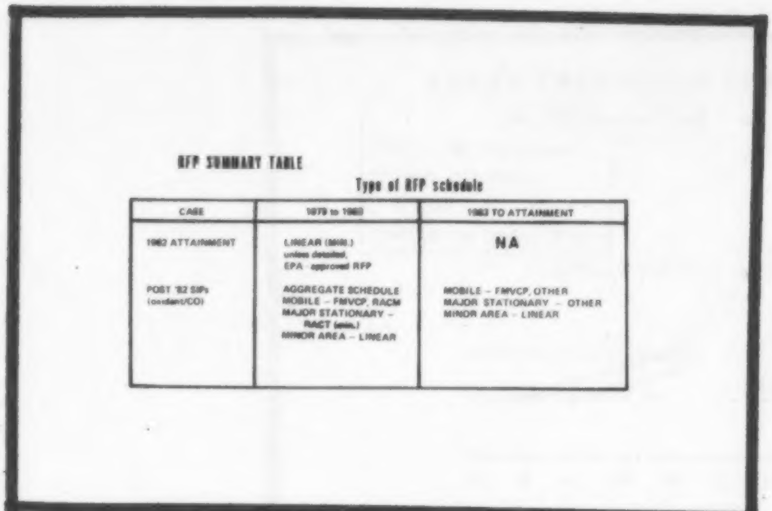
RFP AND SECONDARY NAAQS



RFP SUMMARY TABLE

Type of RFP schedule

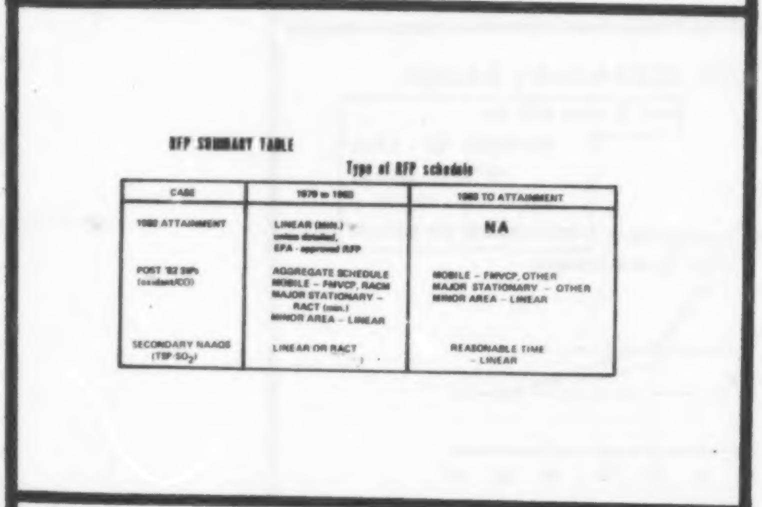
CASE	1979 to 1983	1983 TO ATTAINMENT
1982 ATTAINMENT	LINEAR (min.) unless detailed, EPA - approved RFP	NA



RFP SUMMARY TABLE

Type of RFP schedule

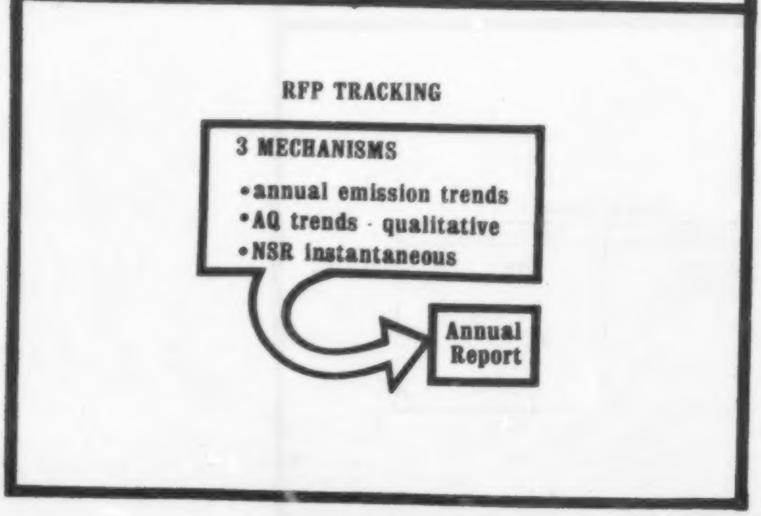
CASE	1979 to 1982	1983 TO ATTAINMENT
1982 ATTAINMENT	LINEAR (min.) unless detailed, EPA - approved RFP	NA
POST '82 SIPs (oxidant/CO)	AGGREGATE SCHEDULE MOBILE – FMVCP, RACM MAJOR STATIONARY – RACT (min.) MINOR AREA – LINEAR	MOBILE – FMVCP, OTHER MAJOR STATIONARY – OTHER MINOR AREA – LINEAR



RFP SUMMARY TABLE

Type of RFP schedule

CASE	1979 to 1982	1983 TO ATTAINMENT
1982 ATTAINMENT	LINEAR (min.) unless detailed, EPA - approved RFP	NA
POST '82 SIPs (oxidant/CO)	AGGREGATE SCHEDULE MOBILE – FMVCP, RACM MAJOR STATIONARY – RACT (min.) MINOR AREA – LINEAR	MOBILE – FMVCP, OTHER MAJOR STATIONARY – OTHER MINOR AREA – LINEAR
SECONDARY NAAQS (TSP SO_2)	LINEAR OR RACT	REASONABLE TIME – LINEAR



RFP TRACKING

3 MECHANISMS

- annual emission trends
- AQ trends - qualitative
- NSR instantaneous

Annual Report

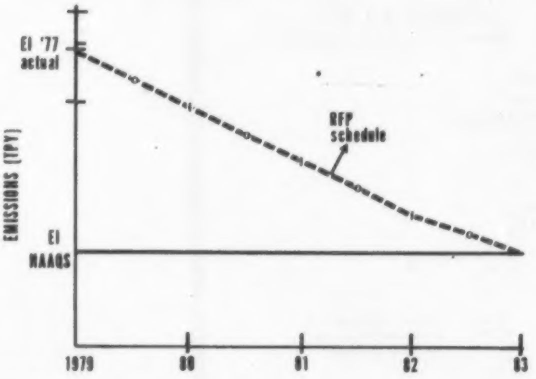
ACTUAL EMISSIONS – MANDATORY REPORTING

ACTUAL E. I. REQUIRED

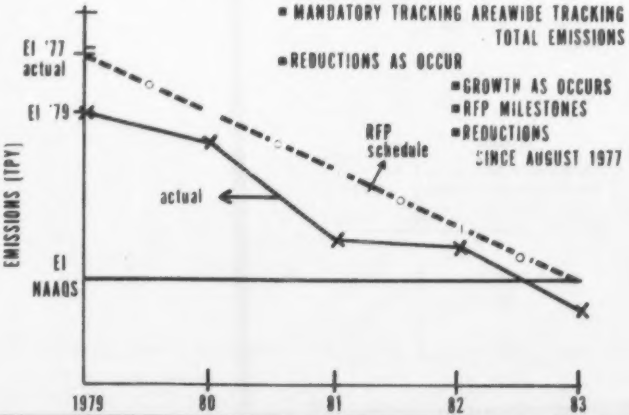
1979 CONTROL STRATEGY

LINKED TO AQ TRENDS

RFP EMISSION TRACKING

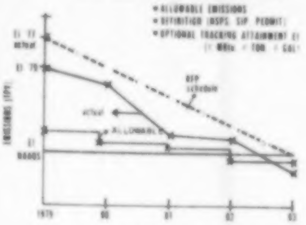


RFP EMISSION TRACKING

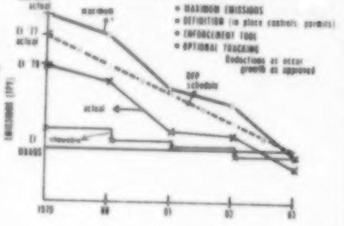


- ACTUAL EMISSIONS
- MANDATORY TRACKING AREAWIDE TRACKING TOTAL EMISSIONS
- REDUCTIONS AS OCCUR
- GROWTH AS OCCURS
- RFP MILESTONES
- REDUCTIONS SINCE AUGUST 1977

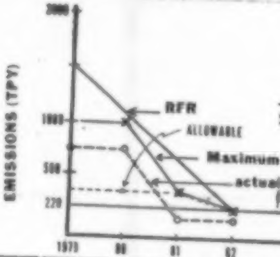
RFP EMISSION TRACKING

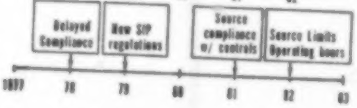


RFP EMISSION TRACKING



TRACKING RFP
Specific Source Example





Delayed Compliance

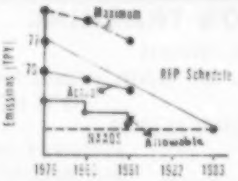
New SIP regulations

Source compliance w/ controls

Source Limits Operating hours

1000 TPY	750 TPY	NC	NC	200 TPY	200 TPY	—ACTUAL EMISSIONS
1000 TPY	1000 TPY	250 TPY	NC	NC	220 TPY	—ALLOWABLE EMISSIONS
2000 TPY	1000 TPY	NC	NC	267 TPY	220 TPY	—MAXIMUM EMISSIONS

Annual Report



SUMMARY FOR YEAR 1981

MANDATORY	RFP Milestone			Actual Emissions*			OPTIONAL Allowable Emissions*			Maximum Emissions			Growth > 1977		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
TOTAL															

* includes growth

AIR QUALITY TRENDS

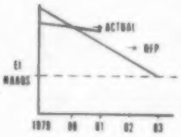
Qualitative check -
only EI trends meaningful

No special reporting
40 CFR Part 51 already

All nonattainment monitors

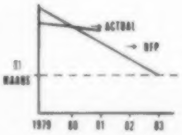
PROBLEMS:

Inadequate Emission Reductions

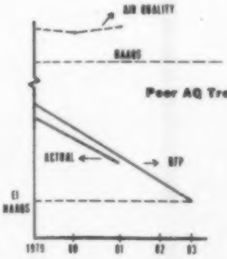


PROBLEMS:

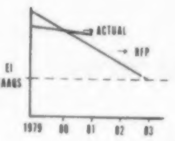
Inadequate Emission Reductions



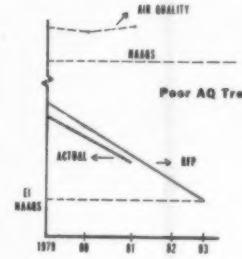
Poor AQ Trends



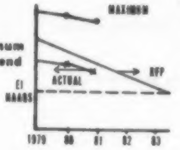
PROBLEMS:



Inadequate Emission Reductions



Poor AQ Trends



Poor Maximum Emission Trend

RESOLUTION OF RFP PROBLEMS

PROBLEMS	CAUSES	CORRECTIVE MEASURES
INADEQUATE EMISSION REDUCTIONS	ENFORCEMENT PROBLEMS EXCESSIVE GROWTH CONTROL EQUIPMENT LAG	ADDITIONAL MEASURES INCREASED ENFORCEMENT NEW RFP SCHEDULE NEW ATTAINMENT DEMONSTRATION STRICTER NSR POLICY
POOR AQ TREND	KEY SOURCES UNCONTROLLED METEOROLOGICAL VARIATIONS	EI ADJUSTMENTS INCREASED ENFORCEMENT AMEND NONATTAINMENT DESIGNATE STRICTER NSR POLICY
POOR MAXIMUM EMISSION TREND	SLOW TPY CONVERSION SLOW SIP TIGHTENING	INCREASED ENFORCEMENT STRICTER NSR POLICY ACCELERATED SIP TIGHTENING

REASONABLE FURTHER PROGRESS

1. General Intent

Both reasonable further progress (RFP) and new source review (NSR) are intended to play essential roles in ensuring that the NAAQS will be met on time. They are feedback mechanisms designed to identify possible errors made in developing the control strategy or in selecting the area and sources of concern. The language from Part D of the new Amendments sets forth the RFP requirement which was not present in the previous 1970 Clean Air Act as amended.

RFP is essentially a two-part process in which a schedule is first developed (typically linear) and then a yearly tracking exercise is performed. The schedule is intended only as a guideline but failure to meet the designated milestones must be explained and could well result in adjustments to: the control strategy, the geographic boundaries of the designated non-attainment area, or the approach taken to review new sources. An annual report for RFP is to be submitted by the State. This report is intended to be a brief but effective exercise in (1) tracking the emission reductions accomplished and (2) verifying that these decreases, taking into account growth, are consistent with the RFP goal of attainment.

2. Reasonable Further Progress - Part D Requirements

Section 171 (1) defines the term "reasonable further progress" as annual incremental reductions in emissions of the applicable air pollutant (including substantial reductions in the early years following approval or promulgation of plan provisions under Part D and Section 110(a)(2)(I) and regular reductions thereafter) which are sufficient in the judgment of the Administrator, to provide for attainment of the applicable national ambient air quality standard by the date required in Section 172(a).

Section 172(b)(3) states that the "non-attainment" SIP submittal shall require, in the interim, reasonable further progress (as defined above) including such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology.

Finally, one option under Section 173 to allow new major construction requires that total allowable emissions (SIP at new source application) will decrease so as to represent reasonable further progress.

3. Importance of RFP

Before discussing how the RFP schedules are to be developed, it is proper to reemphasize that RFP is an important requirement for SIPs in non-attainment areas. The significance of the RFP requirement logically increases as the uncertainties associated with the attainment demonstration increase. If problems with meeting the RFP requirement are identified, then one of several actions may be needed. The precise choice of corrective measures taken will be left to the State subject to the approval of the Regional Administrator. It should be noted that the last measure cited below is what RFP seeks to avoid. Only after all other options are discarded should the need to impose sanctions be seriously considered.

List of possible corrective measures:

a. new RFP schedule
b. new attainment demonstration
c. amended non-attainment designation
d. emission inventory adjustment
e. additional reductions required
f. increased enforcement
g. NSR strategy amended
h. growth sanctions imposed

4. Development of RFP Schedules

The purpose of an RFP schedule is to verify that the emission reductions obtained are being accomplished at a reasonable and efficient rate so that attainment by the prescribed time will take place. Where only violations of the annual primary NAAQS are involved then RFP is intended to represent the application of good controls as expeditiously as practicable (AEAP). RFP schedules to correct violations of the secondary standards are again intended to depict an AEAP timetable but with the connotation of "a reasonable time." Where attainment of the oxidant or carbon monoxide NAAQS can not be accomplished by 1982, then an RFP schedule reflecting application of reasonably available control measures will be acceptable as long as attainment is accomplished by the agreed upon date (not to exceed 1987). Finally, the preceeding general statements also apply to short-term NAAQS violations except that a selective emissions inventory with respect to source inclusion may be tracked in accordance with RFP.

For the majority of cases, EPA expects that RFP schedules will be linear in nature. Figure #1 illustrates the simple design of a linear RFP schedule which starts from the 1977 emissions inventory and ends before 1983* at the emissions inventory predicted as being adequate to demonstrate attainment. No additional resources are typically required to develop such linear timetables.

A linear RFP schedule is thought to be completely within the intent of the Section 171 definition. That is, such a line would effect substantial reductions in the early going and not put off accomplishing most of the required reductions until the last year(s). A linear schedule is also thought to be a stringent timetable to accomplish emission reductions in light of the lag time in the real world for installing control technology. 1977 emissions inventory starting point is consistent with EPA's intent to acknowledge all reductions accomplished since the August 7, 1977, date of enactment in accomplishing RFP. This position is intended to assist the States in meeting the aspect of the RFP requirement that calls for substantial progress in the early years. A linear RFP schedule should not be in any way confused with the similarly shaped linear rollback technique. RFP schedules do not relate to the amount of controls needed but rather to the rate that the necessary emission reductions are to be accomplished. Typically, a linear RFP will refer to the rate that controls determined necessary through non-linear techniques (such as air quality dispersion modeling) must be installed.

In terms of answering the 1979 plan requirement to show RFP the submission of a linear RFP schedule will be acceptable even if a linear timetable would be even initially thought to be inappropriate. Unless the State on its own chooses to submit a detailed nonlinear RFP, a linear schedule for 1982 attainment SIPs will be acceptable to EPA. Such a schedule is thought to reflect a reasonable rate of progress considering the relatively short timeframe allotted for attainment (maximum of 4 to 5 years). To routinely require a detailed RFP may direct critical resources from accomplishing the actual attainment. Only in certain cases where the controls necessary for attainment cannot be reasonably applied as quickly as required by a linear RFP would it be in the best interest of the State to develop and submit a "less-than-linear" RFP schedule.

The linear assumption is initially acceptable for all 1979 plan submittals. Of course, some of the plans particularly those attaining standards after 1982 may have to amend their schedules over the year following the 1979 submittal in order to make RFP more meaningful. Where the linear assumption is thought to be inappropriate, the State must submit an acceptable alternative RFP schedule to the Regional Administrator. Such nonlinear schedules should be developed over the year following the 1979 plan submission. It is acknowledged that developing such RFP's is more resource intensive and should be attempted only when absolutely necessary. Table #1 summarizes the type of RFP schedules that are expected.

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*EPA, of course, encourages states to demonstrate attainment before 1983 and to submit corresponding RFPs.

A non-linear RFP will typically be developed in the case of carbon monoxide or oxidant plans which fail to attain by 1982 but do so not later than 1987. Herein, the aggregate nature of the emission inventory must be considered. Figure #2 shows that individual RFP schedules for each general component of the 1977 emissions inventory (i.e., mobile, major stationary, and minor/area sources) must be developed. For post 1982 oxidant and CO SIPs, reductions from mobile sources until 1983 are expected to follow as a minimum a schedule consistent with the Federal Motor Vehicle Control Program (FMVCP)and the application of RACM. Beyond 1982 until attainment, the reductions from mobile sources will be reflect the imposition of other measures (as necessary) as well as the continuing cleanup accomplished by the FMVCP. Major stationary sources correspondingly must be controlled until 1982 at least as effectively as they would under an RFP schedule exhibiting the application of RACT. After 1982 and until attainment (no later than 1987) the schedule for reductions will reflect the application of other control measures. A linear assumption can be made for the portion of the RFP schedule beyond 1982. Finally, a linear assumption is appropriate throughout the RFP schedule for controlling minor and area (other than mobile) source growth.

Specific non-linear RFP milestones may also be necessary in the case of secondary NAAQS violations. Figures #3 and 4 illustrate the case where both the primary and secondary standards are violated. In general, only where a RACM-based RFP would not demonstrate attainment of at least the primary NAAQS by 1982 would a linear RFP be chosen in preference. Since both RACM RFP's identified in Figures #3 and #4 meet this criteria, they would be chosen in preference to the linear presumption. The RFP schedule after 1982 until attainment is governed by the reasonable time assumption. For at least initial planning purposes, linear reductions over time can be assumed to be reasonable until attainment.

As was the case of 1972 SIP submissions, the 60 ug/m^3 TSP guideline is to generally be used as a standard in assessing RFP. Also, it should be noted that the non-attainment review for new sources will continue in full effect until the secondary standards are met. This includes the possibility of major new source sanctions when RFP for these standards is not being met.

FIGURE 1

RFP SCHEDULES

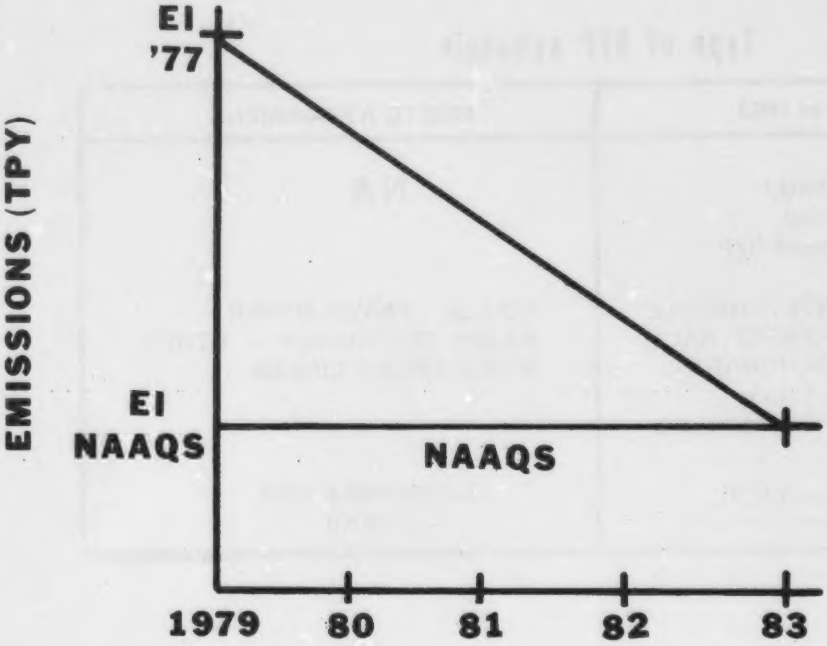


TABLE 1

RFP SUMMARY TABLE

Type of RFP schedule

CASE	1979 to 1983	1983 TO ATTAINMENT
1982 ATTAINMENT	LINEAR (MIN.) unless detailed, EPA - approved RFP	NA
POST '82 SIPs (oxidant/CO)	AGGREGATE SCHEDULE MOBILE – FMVCP, RACM MAJOR STATIONARY – RACT (min.) MINOR AREA – LINEAR	MOBILE – FMVCP, OTHER MAJOR STATIONARY – OTHER MINOR AREA – LINEAR
SECONDARY NAAQS (TSP/SO_2)	LINEAR OR RACT	REASONABLE TIME – LINEAR

FIGURE 2

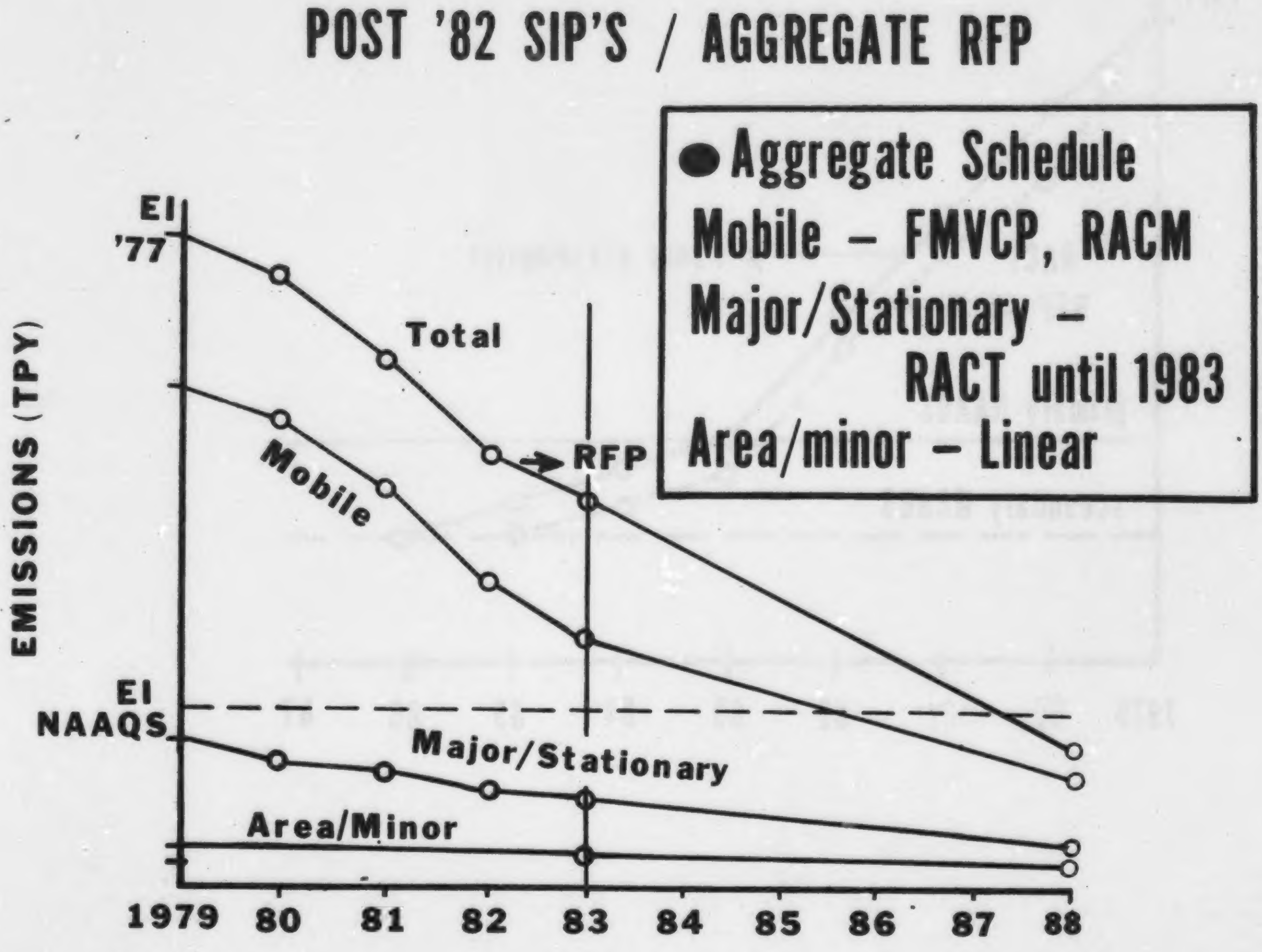

POST '82 SIP'S / AGGREGATE RFP
● Aggregate Schedule
Mobile – FMVCP, RACM
Major/Stationary – RACT until 1983
Area/minor – Linear
EMISSIONS (TPY)
EI '77
EI NAAQS
Total
Mobile
RFP
Major/Stationary
Area/Minor
1979
80
81
82
83
84
85
86
87
88

FIGURE 3

RFP AND SECONDARY NAAQS

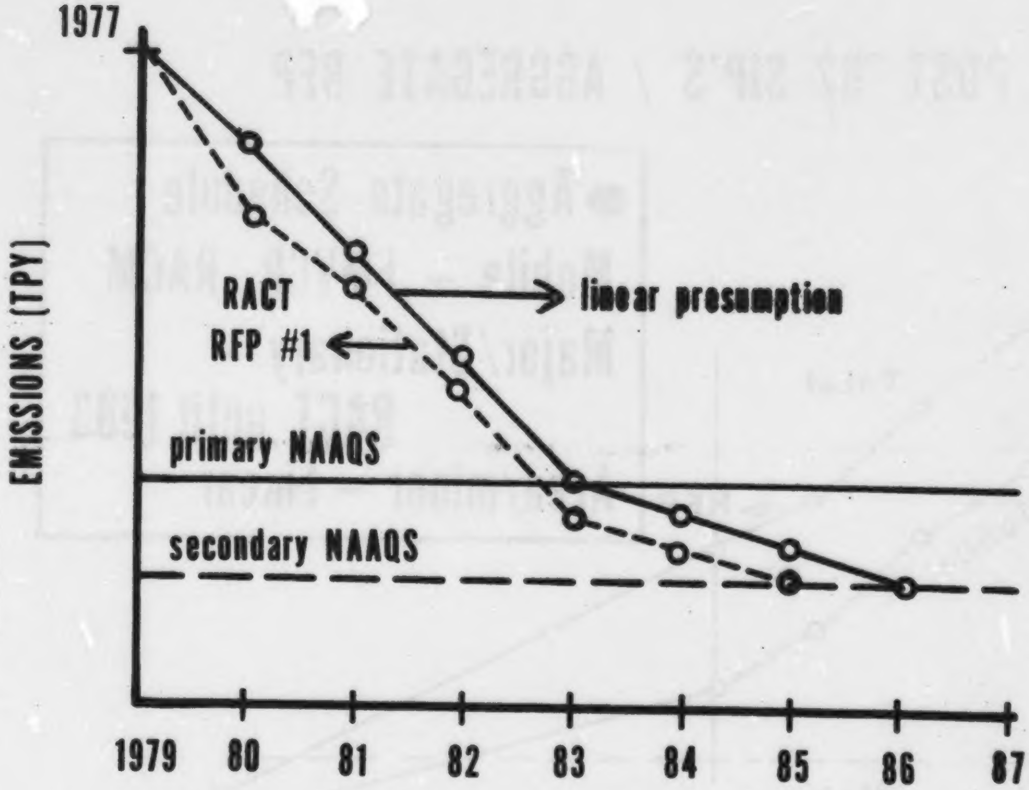
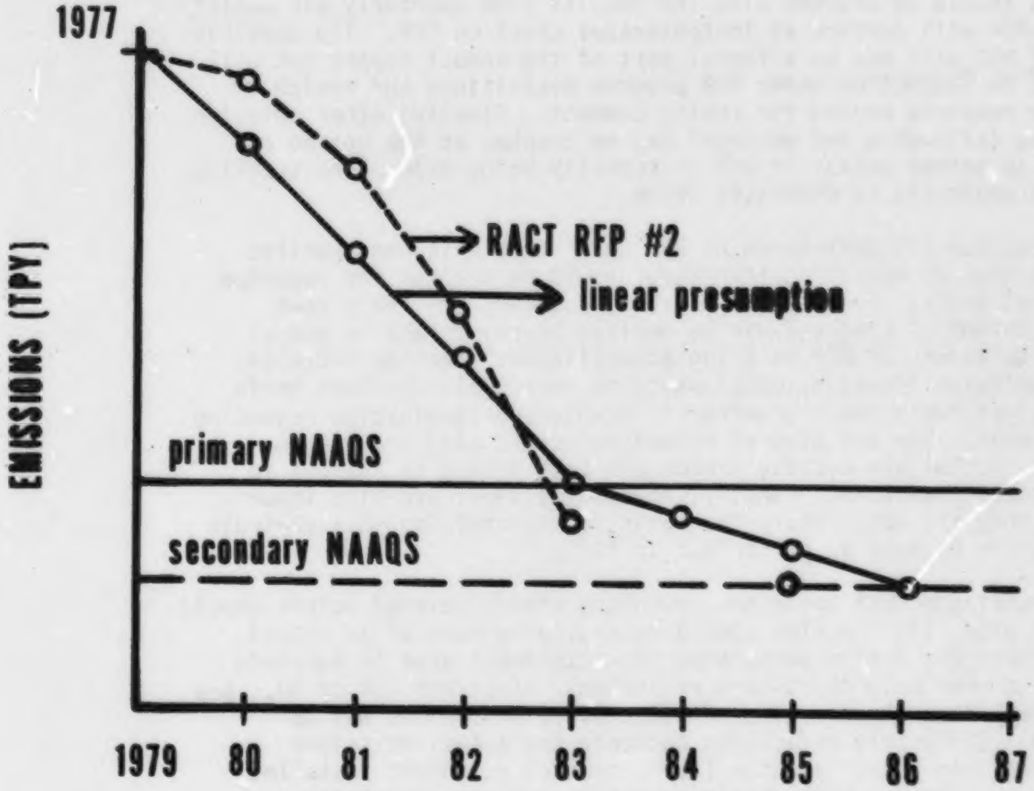


FIGURE 4

RFP AND SECONDARY NAAQS



5. RFP Tracking

RFP is to be tracked primarily by a yearly assessment of the net reductions to actual emissions (including growth) that have taken place. A summary of these reductions will be submitted as an annual report (Table #3). RFP as reported in terms of actual emission reductions must be interpreted in context with actual air quality improvements. Although not formally required in the annual report, emission reductions should be tracked with the results from quarterly air quality reports. NSR will perform an instantaneous check on RFP. The specific results of NSR will not be a formal part of the annual report but will be subject to inspection under NSR program evaluations and review during the required period for public comment. Finally, other emission inventories (allowable and maximum) may be tracked at the option of the State to better assess if RFP is actually being made. The tracking of these inventories is discussed below.

The Section 171 definition of RFP under Part D is non-specific as to what type of emissions inventory should be tracked and reported on an annual basis. For several reasons, however, EPA feels that the clear intent of Congress was to monitor yearly trends in actual emissions to assess if RFP is being accomplished. Section 172(b)(4) requires emission inventory development on an actual emissions basis and sufficient revisions thereafter to enable a determination regarding RFP to be made. The tracking of actual emissions also seems to be reasonable in that air quality trends are best linked to changes in this emissions inventory. Finally, actual emissions are also important since they are most likely the basis for determining what controls are needed for cleanup as prescribed in 1979.

In tracking actual emissions inventory trends several points should be kept in mind: (1) tracking should generally be done on an actual TPY basis over the entire designated non-attainment area (a possible exception is when only short-term violations, of either TSP or SO_2, are the problem. Then the tracking of selected point sources may be acceptable); (2) yearly reductions decrease the actual emissions inventory as they actually occur (i.e., control equipment installed or compliance with new enforceable permit conditions restricting hours of operation or capacity use); (3) actual emissions are increased when new sources come into operation and are reduced when related offsetting reductions actually occur (new sources can only be approved if such construction would not interfere with making RFP--this is discussed in more detail under the NSR section); (4) Yearly actual emissions must be reduced according to the developed RFP milestones (corrective measures may need to be invoked if such progress is not shown); (5) all actual emission cleanup since August 7, 1977, is creditable toward meeting RFP; (6) total actual TPY emissions are generally to be reported unless a specific non-linear RFP schedule has been developed (then tracking of the specific emission inventory components may be required); and (7) the net yearly reduction (or even increase) in actual emissions is not itself critical for any one year as long as the RFP schedule is met and attainment is not jeopardized (good reduction years can therefore compensate for ones of less cleanup).

There is also a competing need to confirm that actual emissions will not increase to levels so as to prevent attainment and/or maintenance of the ambient standards. Allowable emissions are defined as the most emissions a source can emit and still confrom to the most stringent of the following; (1) an applicable NSPS, (2) an applicable SIP limit; and (3) any enforceable permit condition including those restricting hours of operation and utilization of production capacity. The typical analysis for controls needed in 1979 assumes that the 1977 actual emissions from large point sources will not increase appreciably due to voluntary increases in hours of operation and utilization of production capacity not otherwise constrained by enforceable permit conditions. That is, many sources in the present SIP's do not have lbs/hour or TPY emission limits and their emissions can be greatly influenced by voluntary changes in the capacity usage and hours operated. This means sources without constrained capacity usage or hours of operation (enforceable by EPA) must be assumed to operate at full capacity for the entire year.

The only requirement therefore with respect to RFP and allowable emissions is that this inventory be reduced at or below the emissions inventory used to demonstrate attainment by the prescribed time (typically 1982 or 1987). Conceivably sanctions could still be imposed in those areas who reach their attainment goal but cannot guarantee that it will be maintained.

The yearly tracking of allowable emissions is optional with respect to ensuring RFP. For those States who wish to do so (presumably to better ensure that allowable emissions will be at or below those showing attainment) should keep the following in mind: (1) allowable emissions are to be tracked on a cumulative total TPY basis throughout the entire designated non-attainment area (only in the case of short-term violations for SO$_2$ and/or TSP would deviations with respect to source inclusion be acceptable); (2) reductions in allowable emissions occur as enforceable regulations are adopted into the SIP (consequently one expects that allowable emissions will take a large initial drop in 1979 as several general regulations are incorporated into the SIP--fluctuations thereafter will occur as specific enforceable permit conditions are negotiated); (3) the 1977 allowable emissions inventory should be the starting point for tracking allowable emissions--all cleanup since August 7, 1977, is creditable (where lbs/ton, lbs/MBTU, or lbs/gal type limits are apparent, an estimate of the maximum emissions allowed under the SIP should be made as required in the 1979 control strategy demonstration); (4) major point source growth is assumed to increase allowable emissions as it is approved (correspondingly, offsets legally tied to the construction of a major source are also assumed to occur at the same time); and (5) allowable emissions from minor stationary, area, and mobile sources are assumed to be the same as actual emissions.

A third type of emissions inventory is also important with respect to making RFP. Maximum emissions, are the most emissions that a source could emit considering in place controls and enforceable permit conditions tions restricting a source's hours of operation and use of production capacity. Thus, maximum emissions would differ from allowable ones only to the extent a source is out of compliance with an effective emission limit and/or permit condition. The optional yearly tracking of maximum emissions therefore is a valuable enforcement tool to assess how much real progress has been made toward attainment. The difference between the attainment emissions inventory and maximum emissions at any point in time represents the real non-attainment driving force. Consequently, maximum emissions should equal to be less than allowable emissions at attainment (assuming full compliance).

As mentioned, the tracking of maximum emissions is optional in terms of ensuring that RFP is being accomplished. For those States who wish to do so then the following criteria should be followed: (1) maximum emissions are to be tracked on a TPY areawide basis throughout the designated non-attainment area (with same exceptions as noted under "actual" emissions); (2) maximum emissions are reduced as existing sources install new controls or comply with new permit conditions restricting the hours of operation or use of production capacity; and (3) maximum emissions are assumed to increase as major proposed construction is approved (as in the case of allowable emissions, offsets legaly tied to the construction of a major source are also assumed to occur at the same time).

Figures #5, #6, and #7 show the concept of tracking of various types of areawide emissions from a graphic standpoint. Figure #8 and Table #2 have been included to illustrate how new source approvals are taken into account in determining if RFP is met. Figure #9 is included to clarify when certain emission level changes are creditable toward RFP. This figure uses a single source non-attainment problem to illustrate how and when emission reductions are applicable.

The annual report (shown as Table #3) must contain a summary of how total actual emissions have been reduced relative to the

Figure 5

RFP EMISSION TRACKING

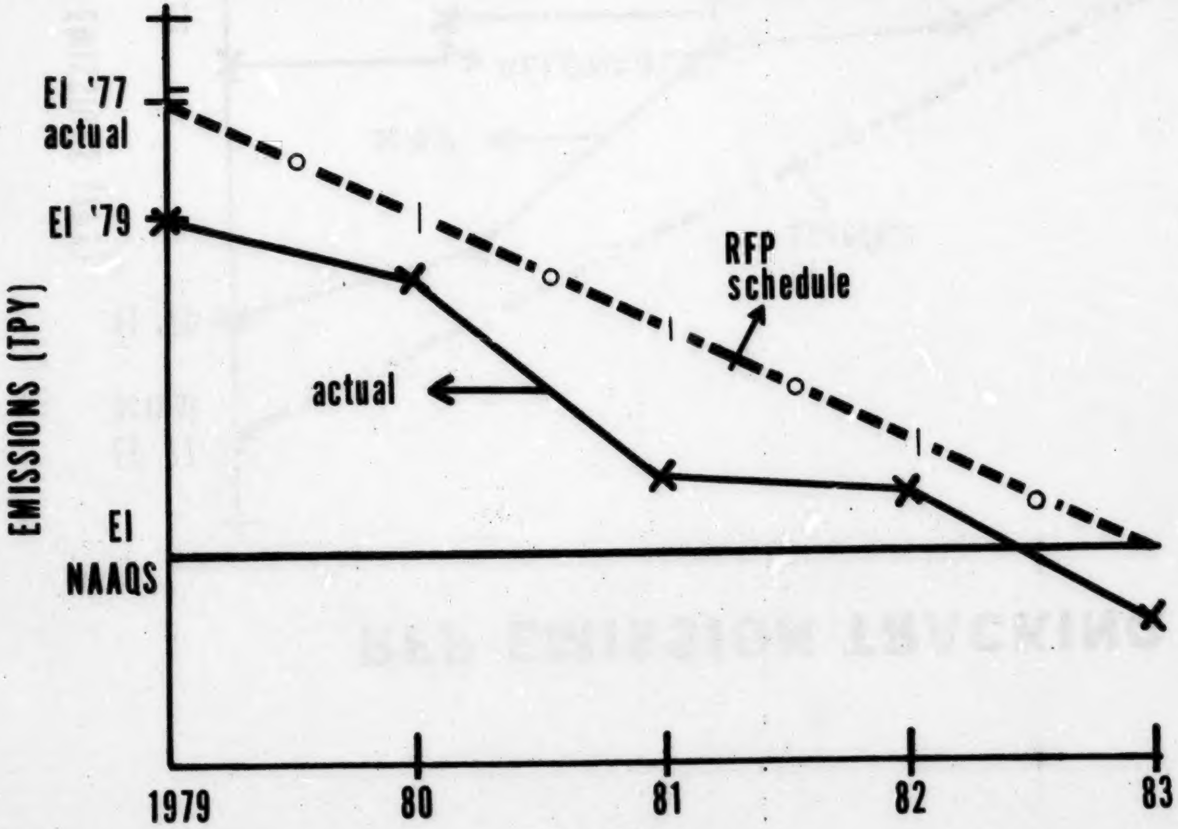


Figure 6

RFP EMISSION TRACKING

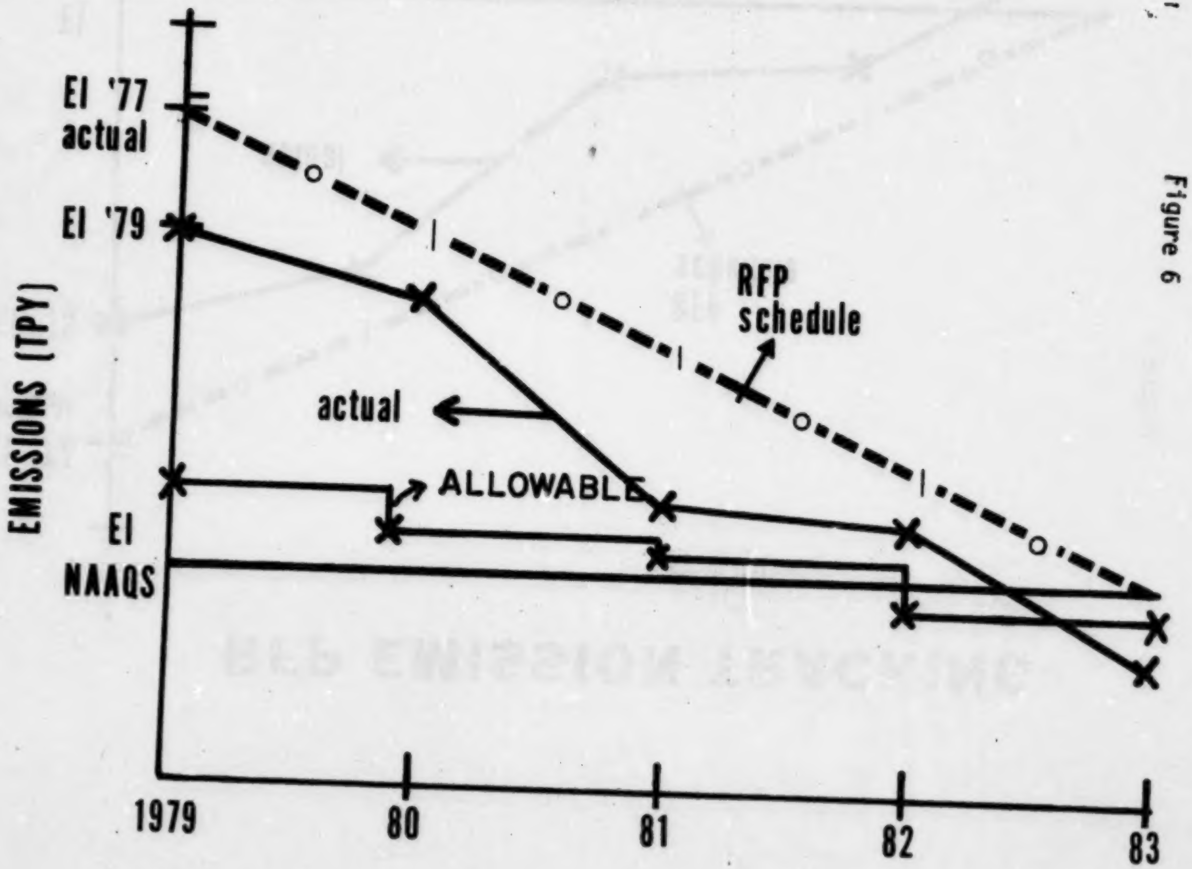


Figure 7

RFP EMISSION TRACKING

- MAXIMUM EMISSIONS
- DEFINITION (in place controls, permits)
- ENFORCEMENT TOOL
- OPTIONAL TRACKING
  Reductions as occur
  growth as approved

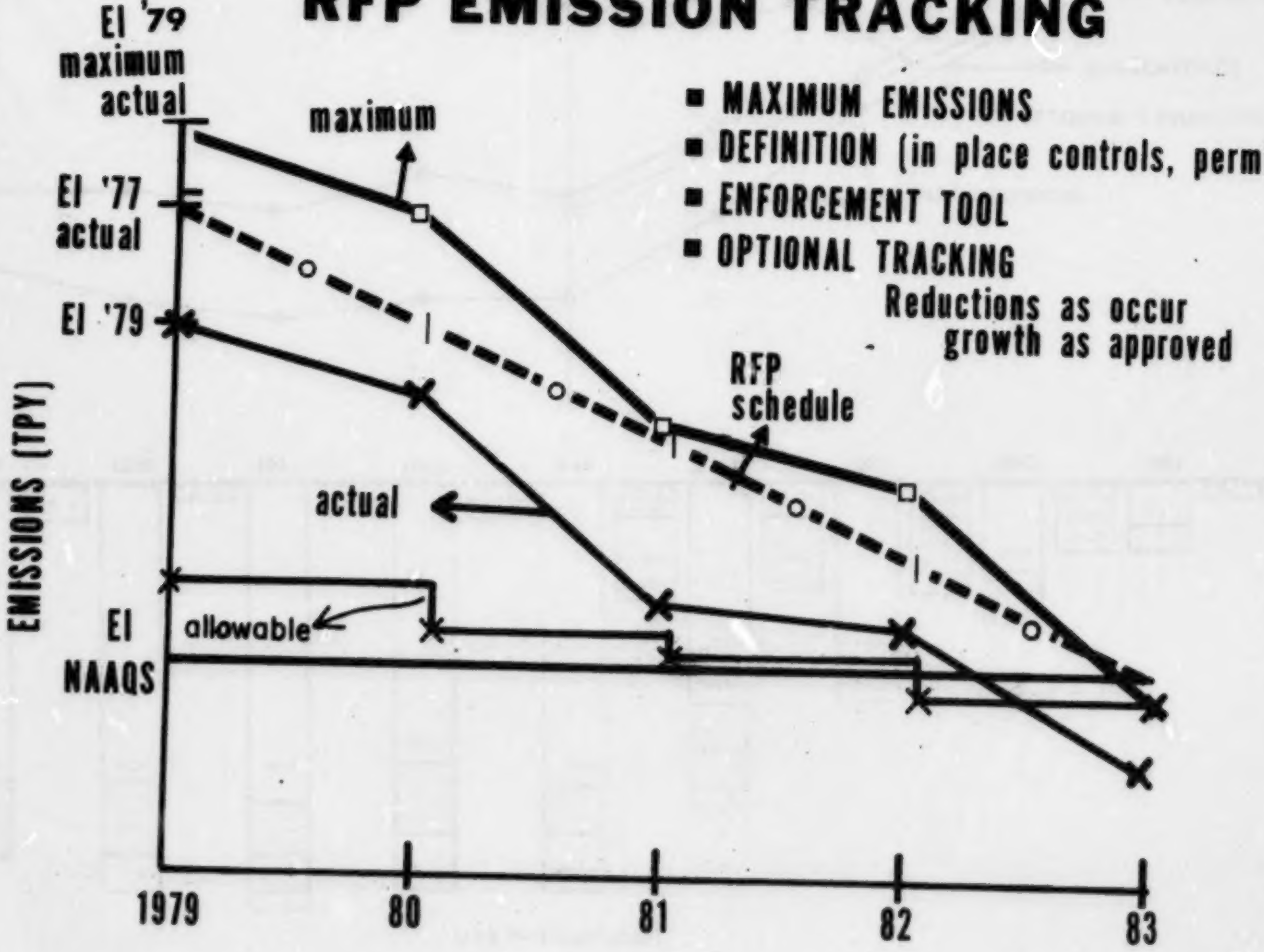
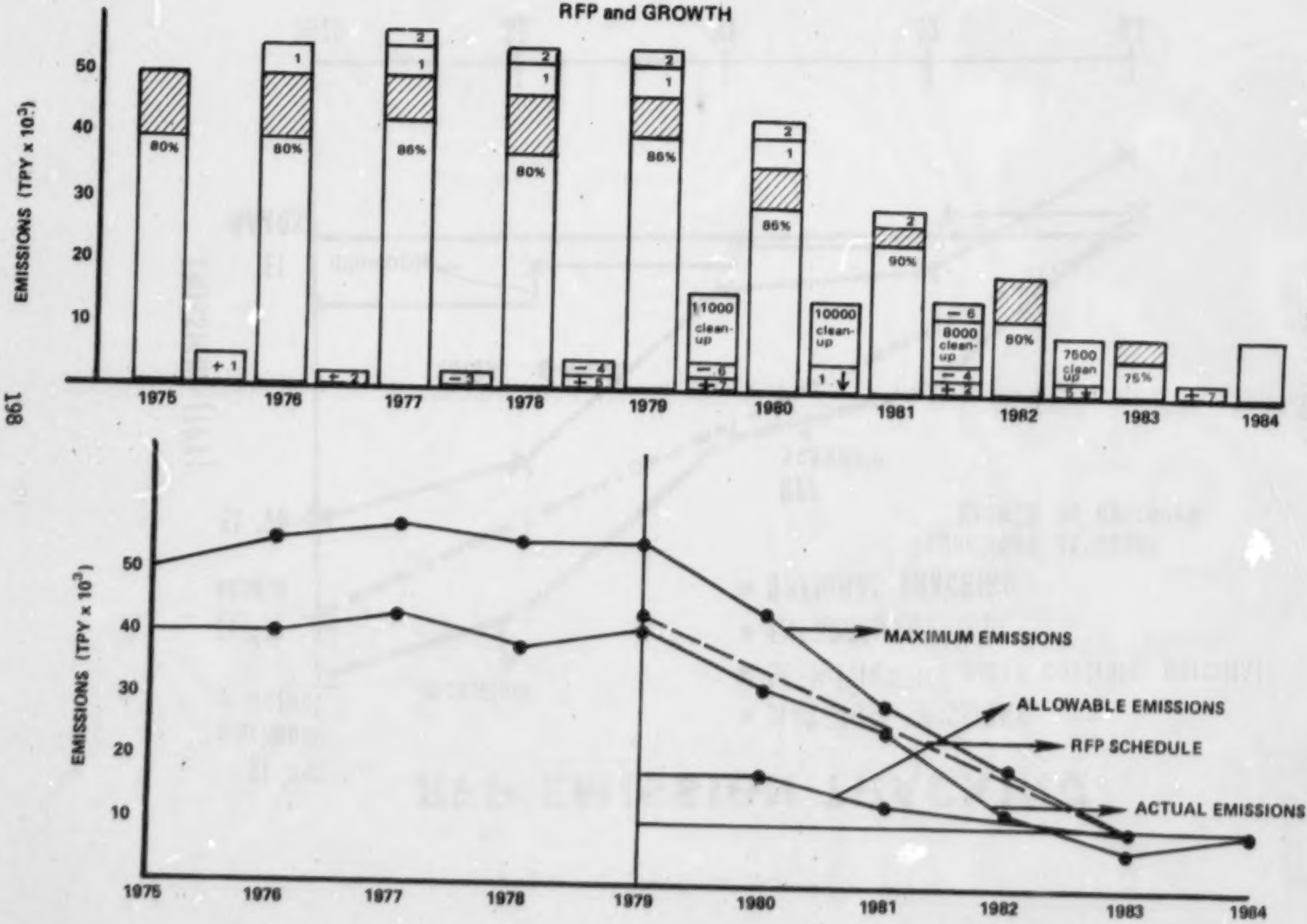


Figure 8



RFP and GROWTH

TABLE #2

RFP AND GROWTH

YEAR	ACTION	MAXIMUM EMISSIONS (TPY)	ACTUAL EMISSIONS (TPY)	ALLOWABLE EMISSIONS (TPY)
1975		50,000	40,000	50,000
	#1 Approval (w/o offsets)	+ 5,000	---	+ 5,000
1976		55,000	40,000	55,000
	#2 Approval (w/o offsets)	+ 2,500	---	+ 2,500
	6% Increase in capacity	---	+ 3,000	---
1977		57,500	43,000	57,500
	#3 Shutdown	- 2,500	- 2,500	- 2,500
	6% Decrease in capacity	---	- 2,850	---
1978		55,000	38,000	55,000
	#5 Approval w/#4 offsets	---	---	---
	6% Increase in capacity	---	+ 2,850	---
1979		55,000	40,850	55,000
	#7 Approval w/#6 offsets	---	---	---
	RFP cleanup	-11,000	- 9,020	-36,500
1980		44,000	31,830	18,500
	RFP cleanup	-10,000	- 8,200	---
	4% Increase in capacity	---	+ 1,060	---
	#1 Operation at 15% approval	- 4,250	+ 750	- 4,250
1981		29,750	25,460	14,250
	RFP cleanup	- 8,000	- 7,000	---
	10% Decrease in capacity	---	- 1,350	---
	#2 Operation at 15% approval	- 2,125	+ 375	- 2,125
	#4 Offsets occur	---	- 2,500	---
	#6 Offsets (beyond attainment occur)	---	- 2,500	---
1982		19,625	12,465	12,125
	RFP cleanup	- 7,500	- 5,625	---
	#5 Operation at 15% approval	- 2.125	+ 300	- 2,125
	5% Decrease in capacity	---	- 300	---
1983		10,000	6,840	10,000
	#7 Operation	---	+ 2,500	---
	5% Increase in capacity	---	300	---
1984		10,000	9,640	10,00

---

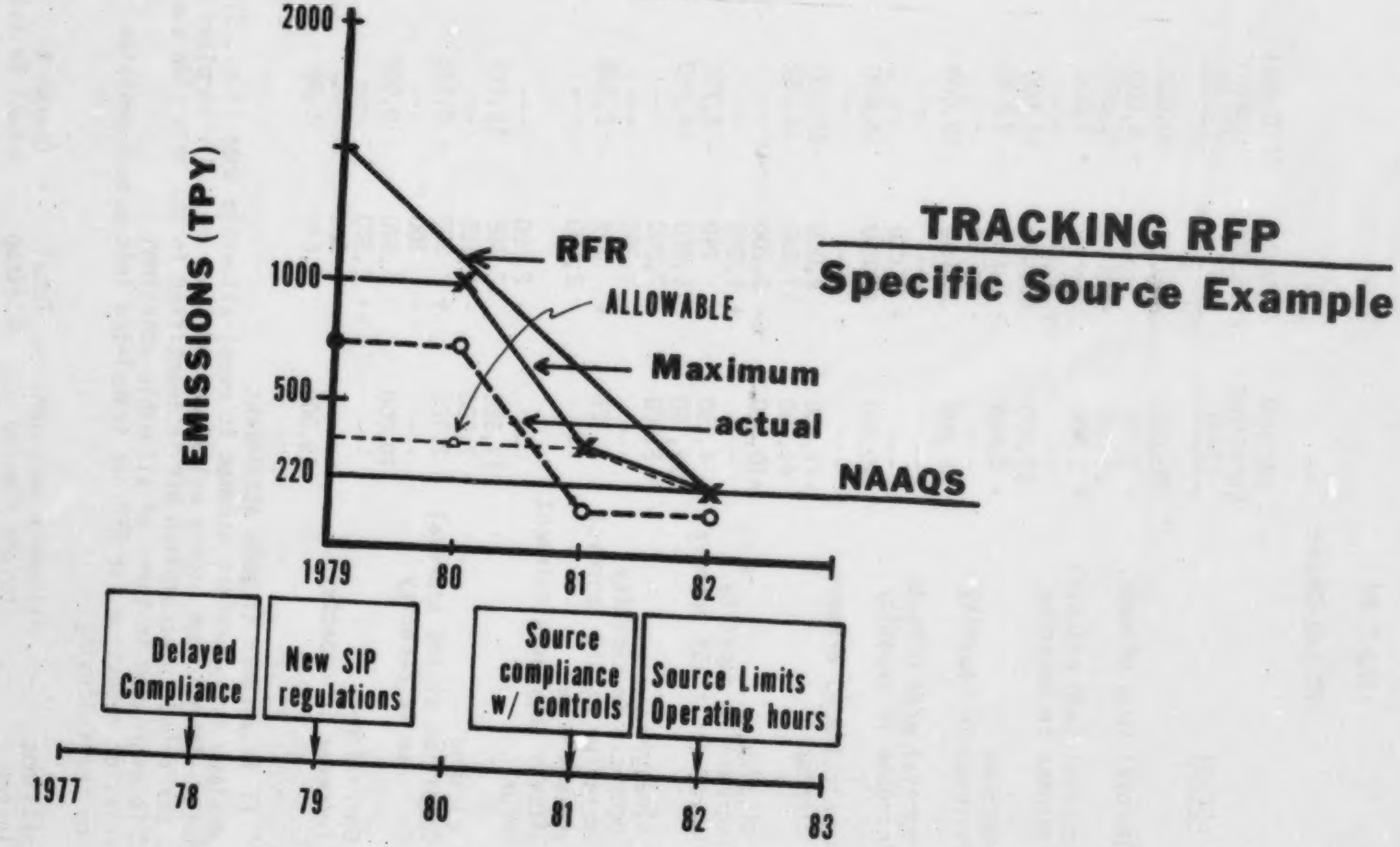
[a] A 10,000 TPY EI is assumed to show attainment

[b] Until 1979 maximum emissions are assumed to equal allowable ones (i.e., SIP limits coincide with maximum source emissions and they are fully complied with)

[c] All cleanup performed to accomplish RFP is identified in the 1979 plan submission and is expressed in terms of allowable emissions

[d] Allowable emission reduction for RFP are translated into actual emission reductions by the following:

Actual Emissions Before Cleanup - Allowable emissions before cleanup - Total Cleanup = Change to Actual Emissions

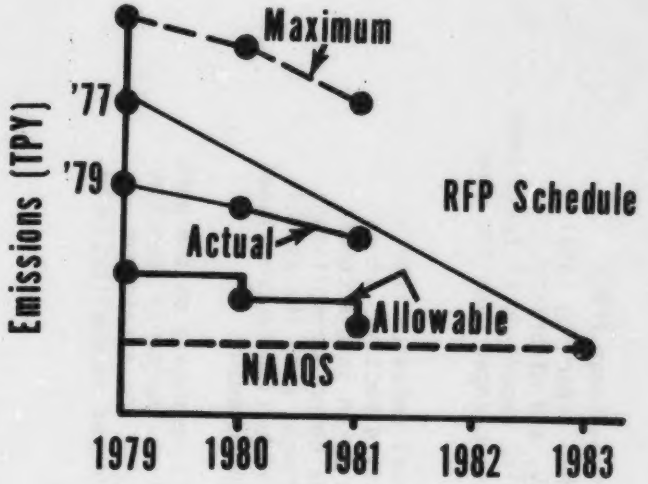


1500 TPY	750 TPY	NC	NC	200 TPY	200 TPY	–ACTUAL EMISSIONS
1000 TPY	1000 TPY	250 TPY	NC	NC	220 TPY	–ALLOWABLE EMISSIONS
2000 TPY	1000 TPY	NC	NC	267 TPY	220 TPY	–MAXIMUM EMISSIONS

Figure 9

TABLE 3

Annual Report



SUMMARY FOR YEAR 1981

MANDATORY

	RFP Milestone			Actual Emissions *		
	1979	1980	1981	1979	1980	1981
TOTAL						

OPTIONAL

Allowable Emissions *			Maximum Emissions *			Growth > 1977		
1979	1980	1981	1979	1980	1981	1979	1980	1981

* includes growth

applicable RFP milestones. Only where special non-linear RFP's are applicable will Table #3 be more specific than reporting total actual emissions (i.e., mobile, major stationary, and minor/area). Although not formally required, a State might also report or at least keep track of how maximum and allowable emissions have changed over the same time period.

Section 171(1) defines RFP in terms of annual emission reductions and does not mention changes in air quality directly. It is our position that air quality changes should be taken into account, at least qualitatively, in determining if RFP is being accomplished. That is, the intent of reviewing air quality changes with the associated emission reductions is to ensure that the reductions accomplished are meaningful in terms of actual air quality improvement.

No special reporting of air quality data is necessary on the part of the State since 40 CFR Part 51 already requires quarterly reporting (45 days thereafter) to be submitted to EPA. Only non-attainment monitors in the designated area should be considered in qualitatively assessing RFP.

6. Problems and Adjustments

It is to be expected that the annual report for RFP or the air quality trends data will identify from time to time the existence of some control strategy or implementation problems. In fact, this is precisely the intended function of RFP. That is, the RFP report attempts to identify problems so that they can be resolved without jeopardizing attainment by the prescribed date.

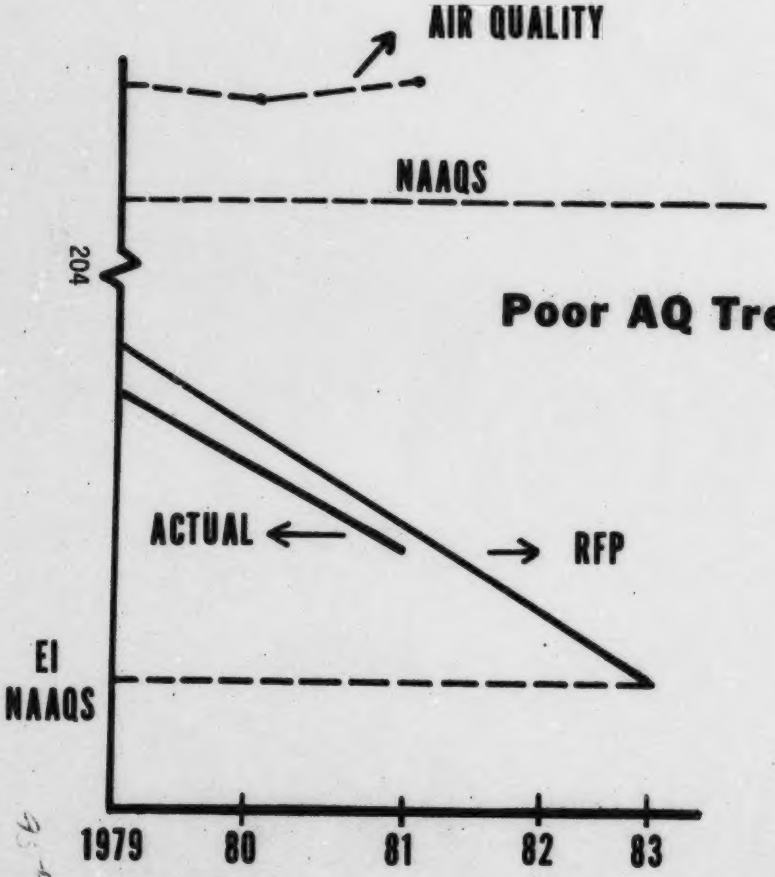
Figure #11 illustrates three types of problems that may well occur. The first of these problems is simply failing to obtain sufficient actual emission reductions to meet the specific RFP milestone. Here we are talking about deviations of more than 5% from the defined RFP schedule. Such a problem could be the result of excessive growth (major and/or minor area growth), enforcement problems, or the lag time to install control equipment.

The second problem identified is poor air quality improvement despite the accomplishing of all the emission reductions called for under RFP. Conceivably, this problem could be caused by the persistence of unusual meteorological conditions, overestimating the value for cleaning up certain emissions sources (bad emission factors), or the omission of key sources from the inventory altogether. The latter more specifically refers to the lack of control on key sources which have not been included in the initial emissions inventory developed for the non-attainment area.

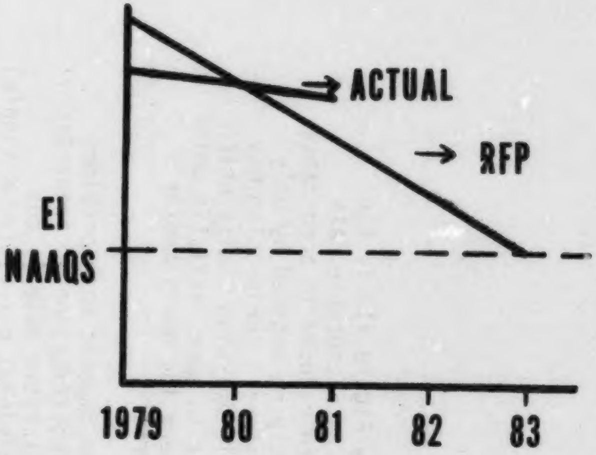
The third and final problem identified by Figure #10 is the inability for maximum emissions to decline at an acceptable rate notwithstanding that actual emissions have been reduced in accordance with the RFP schedule. This problem will likely be noticed by only those States who track trends in maximum emissions. The problem may occur due to delays in converting SIP allowable emission limits which far exceed what a source could physically emit to more realistic emission rates or the failure to constrain the operating hours and/or capacity utilization of key sources as appropriate.

In general, no sanction penalties will be imposed when problems such as those mentioned are identified if a justification is presented which demonstrates that attainment by the prescribed date is not jeopardized. However, in many cases some additional corrective action(s) may be necessary. Table #4 provides a summary of problem types, their possible causes, and candidate measures for addressing them.

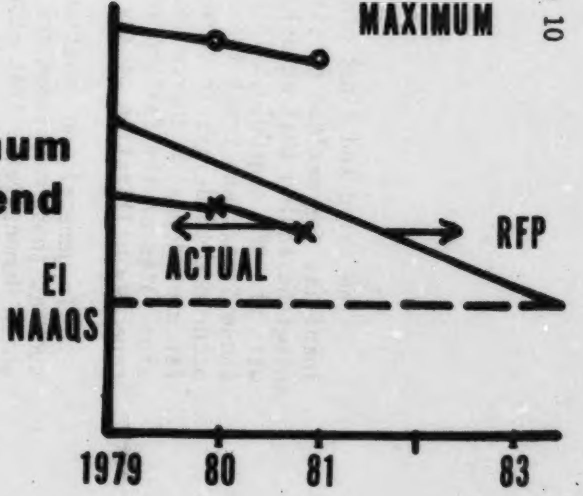
PROBLEMS:



Poor AQ Trends



Inadequate Emission Reductions



Poor Maximum Emission Trend

Figure 10

TABLE 4

RESOLUTION OF RFP PROBLEMS

PROBLEMS	CAUSES	CORRECTIVE MEASURES
INADEQUATE EMISSION REDUCTIONS	ENFORCEMENT PROBLEMS EXCESSIVE GROWTH CONTROL EQUIPMENT LAG	ADDITIONAL MEASURES INCREASED ENFORCEMENT NEW RFP SCHEDULE NEW ATTAINMENT DEMONSTRATION STRICTER NSR POLICY
POOR AQ TREND	KEY SOURCES UNCONTROLLED METEOROLOGICAL VARIATIONS	EI ADJUSTMENTS INCREASED ENFORCEMENT AMEND NONATTAINMENT DESIGNATE STRICTER NSR POLICY
POOR MAXIMUM EMISSION TREND	SLOW TPY CONVERSION SLOW SIP TIGHTENING	INCREASED ENFORCEMENT STRICTER NSR POLICY ACCELERATED SIP TIGHTENING

75%

Procedural Requirements

PROCEDURAL REQUIREMENTS

- PERIODIC PROGRESS REPORTS
- RULES, REGULATIONS, AND SCHEDULES
- COMPLIANCE SCHEDULES
- RESOURCES REQUIRED
- MISCELLANEOUS PART 51 REQUIREMENTS

PERIODIC PROGRESS REPORTS

- REPORTING REQUIREMENTS APPLICABLE TO ALL AREAS
- SUMMARY OF 1979 SUBMISSION REQUIREMENTS
- SCHEDULES FOR DEVELOPMENT OF MEASURES — RECOMMENDED MILESTONES
- I/M SCHEDULE

REPORTING REQUIREMENTS APPLICABLE TO ALL AREAS

	EXISTING	PROPOSED
● Air Quality Data	Quarterly	Before 1/81: Quarterly After 1/81: Selected stations-Quarterly All stations-Annually
● Emission Data ● Plan Enforcement ● Substantive Revisions ● Plan-Prescribed Actions (Milestones)	Semi–Annually	Annually
● Enforcement Orders, and Other State Actions	Within 60 days of issuance or adoption	

POLLUTANT	ATTAINMENT DATE	1979 SUBMITTAL	
		REGS.	SCHEDULES
SO_2	1982	Yes	No
No_x	1982	Yes	Yes
Particulate Matter	1982	Yes Traditional Source(includes fugitive)	Yes Non-Traditional
O_x	1982/1987	Yes Stationary Source (10 CTG)	Yes 1. later CTG's issued after Jan. 1978 2. I/M 3. TCM 4. other measures
CO	1982/1987	Yes Stationary Sources	Yes 1. I/M 2. TCM 3. other measures

SCHEDULE FOR DEVELOPMENT OF MEASURES

APPLICABLE TO	NOT APPLICABLE TO
NO_x	SO_2
TSP (Non-traditional sources)	TSP (Traditional Sources)
O_x / HC(I/M, TCMs, other)	O_x/HC (stationary sources 1st 10 CTGs)
CO(I/M, TCMs, other)	CO (stationary sources)

RECOMMENDED MILESTONES

- Evaluate Alternative Measures
- Select Alternative Measures
- Hold Public Hearing
- Adopt Regulations and/or Measures
- Submit Regulations and/or Measures to EPA

I / M SCHEDULE

1. INITIATION OF PUBLIC INFORMATION PROGRAM.
2. DECISION ON TYPE OF SYSTEM TO BE IMPLEMENTED.
3. DEVELOPMENT AND ISSUANCE OF RFPs.
4. AWARD TO CONTRACTOR(S).
5. INITIATION OF CONSTRUCTION OF FACILITIES.
6. COMPLETION OF CONSTRUCTION OF FACILITIES.
7. COMPLETION OF EQUIPMENT PURCHASE.
8. ADOPTION OF QUALITY CONTROL PROCEDURES AND GUIDELINES.
9. ADOPTION OF CUTPOINTS.
10. INITIATION OF HIRING AND TRAINING OF INSPECTORS OR LICENSING OF GARAGES.
11. INITIATION OF PILOT PROGRAM.
12. MECHANICS TRAINING AND/OR INFORMATION PROGRAM.
13. INITIATION OF MANDATORY MAINTENANCE.
14. INITIATION OF MORE STRINGENT PHASES OF THE PROGRAM (IF APPLICABLE).

RULES, REGULATIONS, AND SCHEDULES

REQUIREMENTS

- § 172 (b) (8), (10)
- SIP CRITERIA MEMO

APPLICABLE DEFINITIONS

- EMISSION LIMITATIONS
- SCHEDULES AND TIMETABLES OF COMPLIANCE

RULES, REGULATIONS, AND SCHEDULES

PLAN PROVISIONS

- "WRITTEN EVIDENCE" OF ADOPTION OF RULES, REGULATIONS, AND SCHEDULES
- "COMMITMENTS" TO ENFORCE PLAN PROVISIONS
- "LEGALLY ENFORCEABLE PROCEDURES" OTHER THAN EMISSION LIMITATIONS
- SANCTIONS FOR FAILURE TO MEET A SCHEDULE OR "COMMITMENT"

I. **Two Options for Nonattainment SIP Revisions**

- ■ **Submit Future Effective Regulations and Schedule of Compliance**
- ■ **Submit Immediately Effective Regulations and Provide for Compliance Schedules in form of:**
  - * **Variances; or**
  - * **Delayed Compliance Orders**

RESOURCES REQUIRED (§ 172(b) (7)

- REQUIREMENT (§ 172(b) (7)
- SUGGESTED FORMAT
- "COMMITMENT" OF RESOURCES

RESOURCE ESTIMATES BY FUNCTION

Control Measures	State agencies	Local agencies	A-95 Clearing House	Planning agencies	Trans. agencies (MPO's)	Other agencies
Measure a						
Measure b						
●						
●						
●						
Measure m						
Total						

MISCELLANEOUS PART 51 REQUIREMENTS

- PUBLIC HEARINGS (§ 51.4)
- SUBMISSION OF PLANS (§ 51.5)
- SOURCE SURVEILLANCE (§ 51.19)
- RULES AND REGULATIONS (§ 51.22)

PERIODIC PROGRESS REPORTS

Under the Act and the SIP criteria memorandum, the 1979 SIP revision need not contain all the legally enforceable measures called for by a control strategy for all cases. A previous discussion indicated that certain plan revisions required adopted measures and other revisions need only contain schedules for adoption of measures. This discussion will expand on this requirement. Where schedules are submitted, however, the State must annually report on the progress made in achieving the milestones set forth in those schedules. Also the State must demonstrate in its annual report that "reasonable further progress" has been made in reducing emissions in the nonattainment area; a discussion of what constitutes "reasonably further progress" has also been presented previously. Failure to meet the milestones in a revision for a nonattainment area or failure to achieve reasonable further progress in reducing emissions can result in the imposition of sanctions concerning growth of major sources and Federal grant monies.

REPORTING REQUIREMENTS APPLICABLE TO ALL AREAS

	Existing Reporting	Reporting to be Proposed
I. **Air Quality**		
A. After 1/81		
1. NAMS (SAROAD format)		Quarterly (90 days after period)
2. SLAMS (summary format)		Annually, calendar year (6 mos. after period)
B. Before 1/81 All air quality data - SAROAD format	quarterly (45 days after period)	
II. **Emissions**	semi-annually (45 days after period)	Annually, calendar year (6 mos. after period)
Source sizes covered:		
--PM,SO_x,HC,NO_x--100 T/Y actual	ditto	ditto
--CO--100 T/Y actual	ditto	(NA)
--CO--1000 T/Y actual	(NA)	ditto
Emission points within facility covered:		
--PM,SO_x,HC,NO_x--25 T/Y actual	ditto	ditto
--CO--250 T/Y actual	(NA)	ditto
--CO--25 T/Y actual	ditto	(NA)

Format:

--PM,SO_x,CO,HC,NO_x--NEDS

Sources covered:

--Those that achieve compliance
--New or modified sources approved or that have begun operation
--Those that cease operation

REPORTING REQUIREMENTS APPLICABLE TO ALL AREAS (cont'd)

	Existing Reporting	Reporting to be Proposed
III. Plan Enforcement	semi-annually	Annually
--Achievement of increments of progress in compliance schedules --Enforcement actions Area sources--% in compliance		
IV. Substantive Revisions	ditto	Annually
V. Enforcement Orders and Other State Actions	within 60 days of issuance or adoption	within 60 days of issuance or adoption
VI. Plan-prescribed Actions Including:	semi-annually	Annually
--Obtaining resources --Adopting new laws or regulations --Conducting studies --Initiating or expanding programs		

SUMMARY OF 1979 SUBMISSION REQUIREMENTS

Pollutant	Attainment Date	1979 Submittal Regs.	Schedules
SO_2	1982	Yes	No
NO_x	1982	Yes	Yes
TSP	1982	Yes	Yes
		Traditional Source (Includes Fugitive)	Non-Traditional
Ox	1982/1987	Yes	Yes
		Stationary Source (10 CTG)	1. Later CTGs issued after Jan. 1978 2. I/M 3. TCM 4. Other measures
CO	1982/1987	Yes	Yes
		Stationary Sources	1. I/M 2. TCM 3. Other measures

THE VEHICLE INSPECTION/MAINTENANCE SCHEDULE

Congress called for a "specific schedule of implementation" for inspection/maintenance. As a part of the schedules for implementation then, the specific goals listed below will have to be included. Those that are dependent on the type of system chosen (state-run centralized, contractor centralized, or garage-based) are denoted by an asterisk(*).

1. Initiation (or continuation) of public information program including publicizing the inspection maintenance program in the media, meeting and speaking with affected interest groups, etc.

2. Decision on type of system to be implemented.

3. Development and issuance of RFPs.*

4. Award to contractor(s).*

5. Initiation of construction of facilities.*

6. Completion of construction of facilities.*

7. Completion of equipment purchase.

8. Adoption of quality control procedures and guidelines, including emission analyzer requirements.

9. Adoption of cutpoints.

10. Initiation of hiring and training of inspectors or licensing of garages.*

11. Initiation of pilot program (voluntary maintenance) with either voluntary or mandatory inspection.

12. Mechanics training and/or information program.

13. Initiation of mandatory maintenance by initiating registration prohibition for non-complying vehicles or similarly effective enforcement mechanism.

14. Initiation of more stringent phases of the program (if applicable).

Schedules should be accompanied by a statement as to the stringency planned plus a brief description of the degree of mechanic training intended.

RULES, REGULATIONS AND SCHEDULES
(§ 172(b)(8),(10))

I. REQUIREMENTS

A. Clean Air Act

§ 172(b)(8): "The plan provisions...shall...(8) contain emission limitations, schedules of compliance and such other measures as may be necessary to meet the requirements of this subsection..."

§ 172(b)(10): "The plan provision...shall...(10) include written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance, or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan..."

II. APPLICABLE DEFINITIONS

A. The terms "emission limitation" and "emission standard" mean a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction. (§ 302(k) of the Clean Air Act.)

B. The term "schedule and timetable of compliance" means a schedule of required measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard. (§ 302(p) of the Clean Air Act.)

WRITTEN EVIDENCE OF ADOPTION AND COMMITMENTS BY STATES, LOCAL GOVERNMENTS, AND REGIONAL AGENCIES

Section 110(a)(3)(D) and 110(c)(5)(B) of the Clean Air Act require that plans with post-1982 attainment dates under section 172(b), and plans where bridge tolls were eliminated under section 110(c)(5)(A), shall--

> for the purpose of implementating...[the] comprehensive public transportation measures [referred to in section 110(c)(5)(B)(ii)], include *requirements to use* (insofar as is necessary) Federal grants, State or local *funds*, or any combination of such grants and funds as may be consistent with the terms of the legislation providing such grants and funds. [Emphasis added.]

Sections 172(b)(7) and (10) provide that the plan revisions required for nonattainment areas shall--

> (7) identify and *commit* the financial and manpower *resources* necessary to carry out the plan provisions required by this subsection; [Emphasis added.]

and shall--

> (10) include *written evidence* that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, *have adopted* by statute, regulation, ordinance, or other legally enforceable document, *the necessary requirements and schedules and timetables for compliance*, and *are committed to implement and enforce* the appropriate elements of the plan; [Emphasis added.]

A. WHAT CONSTITUTES WRITTEN EVIDENCE THAT REQUIREMENTS AND SCHEDULES AND TIMETABLES FOR COMPLIANCE HAVE BEEN ADOPTED?

Section 172(b)(10) provides that each requirement or schedule and timetable for compliance must be adopted by the State or a local government or regional agency, by means of statutes, regulations, ordinances, or other legally enforceable documents.

The Governor should include copies of all such documents with his SIP submittal, and he should certify (*1*) that each of the included documents has been duly adopted by the State, local government, or regional agency; (*2*) that adoption of these documents constitutes adoption of all of the requirements and schedules and timetables for compliance provided for in the SIP; and(3) that the State, local governments, and regional agencies had legal authority to adopt the requirements and schedules and timetables for compliance set forth in the documents.

B. WHAT CONSTITUTES WRITTEN EVIDENCE OF A COMMITMENT TO IMPLEMENT AND ENFORCE A PLAN PROVISION, AND WHAT CONSTITUTES A REQUIREMENT AND COMMITMENT TO USE RESOURCES TO CARRY OUT THOSE PROVISIONS?

Under sections 110(a)(3)(D), 110(c)(5)(B), and 172(b)(7) and (10), each State must include with its SIP submittal written evidence that the State and any local governments or regional agencies responsible for carrying out plan elements are committed to implementing and enforcing those elements, and must in addition include requirements and commitments for the use of identified resources to carry out those plan elements.

The State, local governments, and regional agencies responsible for carrying out any elements of the SIP should each execute an enforceable document containing the following:

1. a certification that the resources identified in the SIP submission for carrying out the elements of the SIP for which the State, local government, or regional agency is responsible, are, in the judgment of the officer or officers signing the document, adequate to implement and enforce those elements of the SIP;

2. a statement that the State, local government, or regional agency enters into a commitment (enforceable to the extent allowed under enforcement provisions of the Clean Air Act and applicable State law) to do the following: (a) implement and enforce the plan elements for which the State, local government, or regional agency is responsible under the SIP; (b) use, insofar as necessary, the resources identified in the SIP for carrying out those SIP elements; and (c) on the schedule specified in the SIP, apply for resources and legislative authority that are not yet available to the State, local government, or regional agency; and

3. a certification that the officer or officers signing the document are authorized to execute it on behalf of the State, local government, or regional agency. Ordinarily, the Governor, Mayor, or other chief executive officer should be one of the signatories.

In some instances, a State, local government, or regional agency may be responsible under a SIP for controlling pollution generated by use of property or facilities owned or operated by the State or its subdivisions--for example, a town responsible for paving roads to control dust, or a state responsible for instituting transportation controls to reduce emissions on public highways. In such instances, the commitment made under paragraph 2 will constitute the legally enforceable "requirement" or "schedule and timetable for compliance" called for by section 172(b)(10) of the Act.

Copies of all of these documents should be included with the SIP submittals, and the Governor should include a statement certifying that each has been duly executed, and that the signatories had legal authority to enter into the commitments and agreements set forth in the documents.

ENFORCEABILITY OF SIPs

PREPARED BY DIVISION OF STATIONARY SOURCE ENFORCEMENT

In determining whether a SIP is enforceable, the emission limiting and other regulatory parts of each plan will be reviewed for clarity and specificity. EPA will consider in this review such questions as whether emission limitations and other controlling terms are well defined; whether it is clear who is being regulated and whether the dates on which actions are required to be taken are clearly stated.

SIP REVISION REQUIREMENTS - TEST METHODS

Many State implementation plans (SIPs) as originally submitted did not adequately prescribe the test methods which would be used when determining compliance with the emission limitations adopted by the States. Compliance determinations and enforcement proceedings made apparent that this weakness existed in some SIPs. To correct this deficiency, EPA promulgated in § 52.12(c) a requirement which states that,

> "(S)ources subject to plan provisions which do not specify a test procedure and sources subject to provisions promulgated by the Administrator will be tested by means of the appropriate procedures and methods prescribed in Part 60 of this chapter, unless otherwise specified in this Part."

This does not solve all the problems which arise when a State fails to designate a specific test method. A source category could be regulated under a SIP for which none of the procedures and methods promulgated in Part 60 would be appropriate.

Another problem which has arisen, deals with the specificity of the emission limitation. While a certain regulation may apply to a specific source category or group of categories (process weight), it is often difficult to ascertain the scope of the requirement. For example, does the emission limit apply only to the stack emissions, or are the fugitive emissions and stack emissions combined in order to determine compliance? A specific emission limit and test method that applies to it will help to clarify how compliance is to be determined.

For these reasons, it is essential that when developing emission limitations, each requirement must specify the appropriate test method and how compliance is to be determined. Since so much SIP analysis depends on an accurate interpretation of the emission limitation and its associated test method, it is extremely important that a clear understanding of both be realized.

Test methods which are included with SIPs should be evaluated to determine their accuracy and consistency. States are encouraged to use EPA reference methods whenever possible.

Another option which States should be encouraged to pursue is the utilization of continuous monitors as the reference or compliance test method. It is EPA's intent to require, in addition to the four source categories now covered in appendix P, additional sources to install continuous monitors. Attainment and maintenance of NAAQS require that sources continuously operate their control equipment in a satisfactory manner. To maintain such compliance, an effective way to insure this would be to utilize continuous monitors as the compliance method thus providing continuous compliance data which can be used in an appropriate enforcement action.

Where technically feasible, the SIP revision must include the following for each emission limitation in the SIP that is expressed as a limit on mass per unit of time or production or on mass concentration; these criteria do not apply where the control measure does not specify this kind of limit:

1. A specifically designated method for each emission limitation on mass per unit of time or production or on mass concentration. The test method cannot be left to the discretion of the enforcing authority on a case-by-case basis.

2. Sufficient specificity in the regulation to define which emission points are and are not included (e.g., whether an emission limitation for a process applies only to the stack emissions or to both stack and fugitive emissions).

3. Sufficient description of the applicable test methods to evaluate the accuracy of the methods, analyze the associated emission limit and thus assess the stringency of the emission limit and its impact on attainment. States that use Part 60 methods and procedures need not submit additional documentation.

4. The establishment of conversion factors or other parameters and the monitoring of these parameters, which will be used to transform test data into units of the applicable standard.

5. The procedures that will be used to conduct the test (e.g., does a test consist of the average of three one-hour runs?).

COMPLIANCE SCHEDULES

1. Each plan must contain legally enforceable compliance schedules setting forth dates by which all sources or categories of sources must be in compliance with an applicable requirement of the plan. Each compliance schedule must contain increments of progress as defined in § 51.1(q) except as provided in 4 below.

2. Compliance schedules as defined in § 51.1(q) shall be submitted with the plan and shall provide for final compliance as expeditiously as practicable but in no case shall extend beyond the attainment date of the plan.

3. Each compliance schedule of 6 months or less in duration from the date of its adoption must contain at least the following increments.

a. Date of initiation of a contract or activity which will result in final compliance.

b. Date of final compliance with the emission limitation.

4. Generally States are encouraged to negotiate individual compliance schedules for sources subject to categorical schedules submitted with the plan.

DSSE GUIDANCE FOR NONATTAINMENT WORKSHOPS

RULES, REGULATIONS AND COMPLIANCE SCHEDULES

I. Submittal of Regulations

A State may submit either future effective or immediately effective regulations as part of its nonattainment plan revision. Regardless of the type of regulations submitted, the plan must include "emissions limitations, schedules, and timetables for compliance with such limitations" to satisfy the requirements of § 110 (a)(2)(B) of the Act. The term "schedule and timetable for compliance" is defined at § 302(p) of the Act. These schedules and timetables must set forth increments of progress, indicating the steps the source must take to achieve final compliance with the regulations. (See 40 CFR § 51.1(q) for minimum increments of progress.)

Appropriate schedules of compliance may be submitted in several forms. If the State adopts future effective regulations, schedules must be incorporated directly into the plan. If the State submits immediately effective regulations, schedules may be submitted at a later date in the form of variances, delayed compliance orders, or categorical schedules amending the SIP. Future effective regulations provide significant advantages and EPA recommends the adoption of this procedure.

A. Future Effective Regulations

Future effective regulations must be accompanied by schedules of compliance at the time of submittal. These schedules will become part of the SIP upon approval, making all sources subject to enforceable schedules immediately. This immediate incorporation of the schedule into the SIP provides a benefit to the source. If the source adheres to the terms of the schedule it will be in compliance with the regulations, and will not be subject to civil or criminal action, or administrative noncompliance penalties under § 120 of the Act. This is the only option that provides such protection from penalties to complying sources.

Future effective regulations may also benefit the State by allowing it to conserve its resources. Specifically, future effective regulations allow the State to develop the required schedules without having to resort to time consuming enforcement proceedings. Additionally, the State has the option of submitting compliance schedules that have been developed either on a source specific or categorical basis. EPA encourages the States to develop source specific schedules to the greatest extent possible. Source specific schedules enhance the enforceability of the plan by reducing broad regulations to terms specifically designed for particular sources. Source specific schedules do, however, require a greater expenditure of resources by the State. For this reason, the State might choose to submit categorical schedules to a certain extent and to modify the categorical schedules for individual sources as necessary later.

B. Immediately Effective Regulations

The second approach a State may follow in submitting its nonattainment plan revision would be to make its regulations immediately effective. Immediately effective regulations require the source to comply at once and may be enforced both judicially and administratively (including imposition of penalties) at once. Ordinarily, a source is not actually expected to comply at once and the State will desire to include appropriate schedules in the SIP to protect the source from enforcement action until it is able to achieve expeditious final compliance. Schedules may be submitted in the form of variances which become part of the SIP under § 110(a)(3), in the form of a delayed compliance order, under § 113(d) of the Act, or as categorical schedules amending the original requirement. Each of these results in several disadvantages, both to the individual source and to the State.

Because the regulations will be effective immediately, many sources will be out of compliance as soon as the nonattainment plan revision is approved. Any such source that is not in compliance with these regulations will be subject to noncompliance penalties as provided by § 120 and civil or criminal action as set forth in § 113(b) and (c). Section 120 penalties are mandatory and must be assessed against any major source in violation after mid-1979.

If the State chooses to formulate a compliance schedule in the form of a variance submitted sometime after approval of the underlying immediately effective emission limit, it will protect the source from enforcement action and noncompliance penalties to a limited degree. Any variance submitted pursuant to § 110(a)(3) of the Act will become part of the SIP upon approval. Thus, a source in compliance with the schedule contained in the variance will not be subject either to enforcement action or noncompliance penalties. Noncompliance penalties must be assessed, however, for any period prior to approval of the variance since the source will be violating the SIP during this time. For each source to be issued a separate variance could take a year or more. Sources would be subject to substantial noncompliance penalties, in addition to the possibility of other enforcement action, until their variances are effective.

The protection against penalties provided by a State issued Delayed Compliance Order (DCO) is even more limited. Compliance with the terms of a State DCO will insulate the source from other enforcement action but it will not ordinarily protect the source from noncompliance penalties. Delayed compliance orders are additions to the SIP which place a violator on a remedial compliance schedule. They do not modify the underlying SIP provisions. Because the underlying SIP provisions are preserved, a source will be subject to noncompliance penalties after mid-1979, even if it is operating pursuant to a DCO that extends beyond that date. In such an instance, the only grounds for immunity from § 120 would be if the source obtains an exemption in accordance with § 120(a)(2)(B) or (C).

A State may develop schedules for particular sources through resort to judicial action. A source complying with the court imposed schedule would remain subject to the noncompliance penalty provisions of § 120 for violation of the underlying immediately effective regulation. Further, unless the court's decree is submitted as a SIP revision, the source would not be insulated from other enforcement action.

Immediately effective regulations may also be disadvantageous to the State. Schedules submitted for sources subject to immediately effective regulations normally are source specific and require observance of certain procedural requirements, not only at the State level, but also in the EPA approval process. Development of schedules through judicial action could take even longer. Where schedules are developed at the same time as the underlying emission limit and are submitted as part of the initial requirement, notice, comment and opportunity for hearing can be provided simultaneously on the emission limit and the schedule or schedules implementing it.

II. Status of Existing Regulations

A State which submits revised more stringent emission limits as part of its nonattainment SIP generally may not revoke pre-existing emission limits applicable to the affected sources unless it also requires that all sources continue to meet interim emissions limitations at least as stringent as the emission limitations contained in the pre-existing regulations. In most cases, a source may not be allowed to operate without controls, or under less stringent controls, while it is moving towards compliance with the new regulations. A plan that does not continue existing control requirements normally would fail to provide for reasonable further progress towards attainment of the air quality standards as required by the Act. New requirements imposed by the plan revisions should normally be treated as being in addition to, rather than in lieu of, those imposed by existing regulations. In such cases failure of the source to meet applicable pre-existing standards will lead to appropriate enforcement action, including assessment of appropriate noncompliance penalties under § 120 of the Act.

There is one major exception to this rule. If the new regulations are "inconsistent" with those currently in effect, the State may (and should), to the extent necessary, exempt the source from the pre-existing regulations. To obtain an exemption, a source should be required to demonstrate that it cannot physically meet the new requirements and continue to comply with the pre-existing requirement. Only the period during which such physical impossibility exists may be covered by an exemption. For example, in the design and contract phases of a new compliance schedule, there should normally be no exemption from the pre-existing emission limit.

If the State expects to grant such exemptions it should establish an appropriate procedure as part of its nonattainment plan revision. The procedure must guarantee that no exemption shall be granted unless the new regulations require controls totally incompatible with those established by the old regulations. Furthermore, the review procedures established must be sufficiently stringent to ensure that any exemption granted will not jeopardize the reasonable further progress required by the Act. Requests for exemptions must be reviewed and, if approved, submitted individually as SIP revisions so that every exemption will be drawn as narrowly as possible.

EPA will approve exemptions in such cases only if the new regulations are inconsistent with the old ones for the source involved. Thus, a source that previously was uncontrolled because it failed to comply with the pre-existing limit applicable to it may not claim that the regulations are inconsistent. Similarly, a source that will meet its new emissions limitation by installing additional equipment or "fine-tuning" equipment already in place should not be granted an exemption except for any limited period of time during which the existing equipment truly cannot be operated while construction or "fine-tuning" is in process. Even a source that must eventually shut down its existing controls will not be eligible for an exemption if it can continue to operate those controls while the new equipment is installed. Only when the construction or installation of the new equipment can no longer proceed while existing controls remain in operation may an exemption be granted.

The State should determine on a source by source basis the extent to which the new regulations are inconsistent. Sources subject to the same requirements may have different physical characteristics and may be able to install new equipment more expeditiously or keep existing equipment operational for a longer period of time. Any exemptions granted should take into account such differences. Additionally, it may be proper for the State to repair interim control measures in certain instances, even though an exemption is granted.

NONATTAINMENT PLAN REVISIONS

MALFUNCTION AND EXEMPTION PROVISIONS

Several of the existing State implementation plans (SIP) provide for an automatic emission limitation exemption during periods of excess emissions due to start-up, shutdown, or malfunction. Generally, EPA agrees that the imposition of a penalty for sudden and unavoidable malfunctions caused by circumstances entirely beyond the control of the owner and/or operator is not appropriate under certain conditions. However, since the SIPs must provide for attainment and maintenance of the national ambient air quality standards, SIP provisions on malfunctions must be narrowly drawn. (SIPs may, of course, omit any provision on malfunctions.)

I. AUTOMATIC EXEMPTION APPROACH

If a nonattainment plan revision contains a malfunction provision, it cannot be the type that provides for automatic exemption where a malfunction is alleged by a source. Automatic exemptions might aggravate air quality so as to result in not providing for attainment of the ambient air quality standards as required by Section 172 of the Clean Air Act, as amended. Additional grounds for disapproving a SIP that includes the automatic exemption approach are discussed in more detail at 42 FR 58171 (November 8, 1977) and 42 FR 21372 (April 27, 1977). As a result, EPA will disapprove any nonattainment plan revision that provides for an automatic exemption in those instances where a source claims excess emissions were caused by start-up, shutdown, or malfunction.

II. ENFORCEMENT DISCRETION APPROACH--SIP EMISSION LIMITATION ADEQUATE TO ATTAIN AMBIENT STANDARDS

EPA could approve nonattainment plan submittals which incorporate the "enforcement discretion approach." Such plans could include a requirement that places the burden on the source of demonstrating to the appropriate State agency's satisfaction that the excess emissions though constituting a violation were due to an unavoidable malfunction. For nonattainment plan revisions that provide for attainment of the ambient air quality standards for a pollutant by 1982, any malfunction provisions must provide for the commencement of a proceeding to notify the source of its violation and to determine whether enforcement action should be undertaken for any period of excess emissions, whether due to malfunctions or otherwise. (The term "excess emission" means air emission rate which exceeds any applicable emission limitation.)

Commencement of such a proceeding could be by issuance of a notice of violation (or some equivalent State mechanism) with the source being provided the opportunity to establish that the violation was due to an unavoidable malfunction. The malfunction provision should provide that the burden is entirely upon the source to establish that the excess emissions resulted from a true malfunction. (A malfunction is defined as a sudden and unavoidable breakdown of process or air pollution control equipment.)

Based on information submitted by the source, the State must determine whether additional enforcement action is necessary. The following factors must, at a minimum, be considered:

1. The air pollution control equipment, process equipment, or processes were at all times maintained and operated, to the maximum extent practicable, in a manner consistent with good practice for minimizing emissions;

2. Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift labor and overtime must have been utilized to insure that such repairs were made as expeditiously as possible;

3. The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

4. All possible steps were taken to minimize the impact of the excess emissions on ambient air quality; and

5. The excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The malfunction provision must provide that only if the State determines that each of these criteria are satisfied, no additional course of action could reasonably have been expected of the owner or operator. In such situations, the malfunction provision could provide that the State would not follow the initial notice of violation with any further enforcement action.

III. SOURCE DEMONSTRATION APPROACH--RACT LIMITATION NOT ADEQUATE TO ATTAIN AMBIENT STANDARDS

Section 172 requires that those nonattainment submittals for photochemical oxidants and carbon monoxide that will not be able to demonstrate attainment by December 31, 1982, must provide for implementation of all reasonably available control measures (RACT).

In a recent Federal court decision (Marathon Oil Co. v. EPA, ___F.2d___ (9th Cir., November 21, 1977) [a decision on malfunction provisions in certain water pollution requirements]), the court distinguishes requirements that are technology based (e.g., non-attainment plans based on RACT rather than attainment of ambient standards) from requirements that are health based (e.g., SIP emission limitations for attainment of the ambient standards). The enforcement discretion approach could be approved in RACT SIPs if modified as set forth below. A State may choose, however, as part of the RACT submittal not to provide a malfunction provision (i.e., Section 116). An acceptable malfunction provision for periods of excess emissions could require a source exceeding applicable emission limitations to report the five categories of information set forth in II above. The source could be given the opportunity to demonstrate that the excess emissions resulted from an unavoidable breakdown of process or control equipment, or from unavoidable production problems. Until such information is evaluated by the State, issuance of a notice of violation (or some equivalent State mechanism) would not be required. An approvable malfunction provision should specify that if the source does not sustain its burden of proof to the State's satisfaction, the excess emissions are a SIP violation and appropriate enforcement proceedings will be initiated by the State. If the source is able to demonstrate that the malfunction was genuinely unavoidable, it will not constitute a violation of the emission limitation.

It should be understood that if over a period of time, application of either the enforcement discretion approach or the source demonstration approach does not significantly curtail malfunctions to the extent that they are the cause of ambient violations, the malfunction portion of the SIP will either have to be further revised by the State or EPA will have to disapprove the SIP.

IV. PHASING IN AND OUT OF EQUIPMENT, ROUTINE MAINTENANCE, BYPASS PROVISIONS, AND PRODUCTION PROCESS EXCESS EMISSIONS

Any activity or event which can be foreseen and avoided, or planned falls outside of the definition of sudden and unavoidable breakdown of equipment. For example, a sudden breakdown which could have avoided by better maintenance procedures is not a malfunction. In such cases, the control agency must enforce for violations of the emission limitation. Two such common events are phasing in and out of equipment, and routine maintenance.

Phasing in and out of process equipment is part of the normal operation of a source and should be accounted for in the design and implementation of the operating procedure for the process and control equipment. Accordingly, it is reasonable to expect that careful planning will eliminate violations of emission limitations during such periods. If excess emissions should occur during routine phasing in and out of such equipment, the excess emissions will not be considered as having resulted from a malfunction unless the source can demonstrate that such emissions were actually caused by a sudden and unforeseeable breakdown in the equipment.

Routine maintenance is a predictable event, which can be scheduled at the discretion of the operator, and which can therefore be made to coincide with maintenance on production equipment, or other source shutdowns. Most sources have the ability to build and maintain inventory upon which the source can draw during periods of shutdown for routine maintenance. Consequently, no excess emissions may be allowed for periods of routine maintenance.

It is recognized that in certain circumstances, it is necessary to bypass control equipment to avoid endangering life or sustaining severe property damage. Such bypassing will not be considered a violation of a RACT SIP under the source demonstration approach if the source sustains its burden of proof in the excess emissions report, but will be considered a violation of the attainment SIP under the enforcement discretion approach.

In addition to malfunctions, it is recognized that excess emissions may occasionally occur during normal production processes, even when the control equipment is well designed, operated and maintained. If the source can demonstrate, in its required excess emissions report, that it was operating the plant according to the above malfunction criteria, and that it was scheduling operations to preclude fluctuations, but that the emission limitation was nevertheless violated for production reasons beyond the control of the source, the excess emissions will not be considered a violation of the RACT SIP under the source demonstration approach, but will be considered a violation of the attainment SIP under the enforcement discretion approach.

IDENTIFICATION OF RESOURCES

(§ 172(b)(7))

--RECOMMENDED FORMAT--

(Found in 40 CFR 51)

Appendix R.—*Agency functions for air quality maintenance area plans for the ______ AQMA in the State of ______ for the year ______*

Control measures	Agencies[1]	State air pollution control agencies	Local air pollution control agencies	Implementation plan review agencies (A-95, 3-C)	Planning agencies	Transportation agencies	Other (water control, public works, etc.)
FUND ESTIMATES BY FUNCTION							
Measure a.							
Measure b.							
Measure m.							
Total funds[2]							
MAN-YEAR ESTIMATES BY FUNCTION							
Measure a.							
Measure b.							
Measure m.							
Total.							

[1] Specific agencies should be identified in a narrative attachment.

[2] Report funds in thousands of dollars.

MISCELLANEOUS PART 51 REQUIREMENTS--SUMMARY

1. § 51.4 Public hearings (also required under § 172(b)(1))--Before a State submits the plan, a compliance schedule or a plan revision to EPA, it must hold a public hearing on the plan, schedule, or revision. The State must also give proper public notice for the hearing at least 30 days prior to the hearing. Although this section specifies formal requirements for the notice and holding of public hearings, a State can obtain EPA approval to use alternative procedures that EPA deems adequate.

2. § 51.5 Submission of plans; preliminary review of plans--The State must submit at least five copies of the plan revision to the appropriate Regional Office.

3. § 51.19 Source surveillance--The plan must provide for monitoring the status of compliance with any rules and regulations that constitute the control strategy. As a minimum, the plan must provide--

--Procedures for requiring owners or operators of sources to maintain records of emissions and report periodically to the States;

--Periodic testing and inspection of sources;

--A system of detection of violations of rules and regulations through enforcement of a visible emission limitation and for investigating compliants;

--Procedures for obtaining and maintaining data on emissions reductions achieved through transportation control measures; and

--Procedures to require sources to install and use emission monitoring devices.

4. § 51.22 Rules and regulations--The State must adopt all rules and regulations necessary for attainment and maintenance of the national standard. The plan must contain copies of all such rules and regulations.

New Source Review

NEW SOURCE REVIEW

NSR

- ★ COMPLEMENTARY DRIVING FORCE
  - ADDITIONAL CLEAN UP
  - NEW TECHNOLOGY DEVELOPMENT
- ★ CONSISTENT WITH RFP
- ★ INSTANTANEOUS "WATCHDOG"
  - RFP AND ATTAINMENT

PART D NSR REQUIREMENTS

1979 PLAN MUST:

1. ATTAIN ON TIME - AVOIDS SANCTIONS
2. IDENTIFY ALLOWABLE GROWTH
3. CONTAIN NSR REGULATIONS
   - ★LAER (as defined)
   - ★STATEWIDE COMPLIANCE
   - ★2 OPTIONS — case-by-case offsets
     accomodative SIP
   - ★SIP CARRIED OUT

POST '82 ATTAINMENT

4. CONTAIN NSR EVALUATION PROGRAM

REGULATORY NSR REQUIREMENTS

APPLICABILITY

★ Major Sources - 100 TPY Potential
July 1, 1979 Preconstruction
★ Entire Nonattainment (case by case exception) Area
★ Date of Application
★ Late Designations
★ External Sources

REGULATORY NSR REQUIREMENTS

LOWEST ALLOWABLE EMISSION RATE (LAER)

* 171 Definition
* Best SIP
* In Practice
* NSPS Minimum

LAER

BEST SIP

CONSIDER

* PROMULGATIONS
* APPROVED REGULATIONS
* "ON BOOKS" - NOT IN EFFECT
* BACT REGS - NOT IN ABSTRACT
* VISIBLE OR EQUIPMENT STANDARDS

ACHIEVABILITY → TECHNICALLY FEASIBLE

LAER

IN PRACTICE

- LIMITED TECHNOLOGY TRANSFER
  - Same gas stream, facilities
- OTHER DETERMINATIONS
  - Constant Changes
  - National Clearing House
  - State Reporting

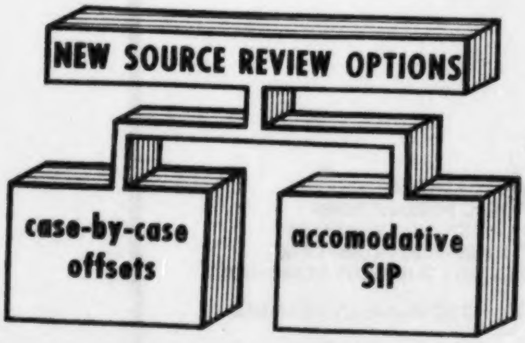
STATEWIDE COMPLIANCE

★ COMPLIANCE BY APPROVAL

★ APPLICABILITY

Existing SIP Limits

★ MAJOR EXISTING SOURCES



NEW SOURCE REVIEW OPTIONS

case-by-case offsets

accomodative SIP

CASE - BY - CASE OFFSETS

MORE RESTRICTIVE IR
OFFSET MINOR/MAJOR
CONSISTENT RFP/ATTAINMENT
APPLICABLE EI

CASE-BY-CASE OFFSETS

- SOURCE OPERATION
- TPY BASIS
- ACTUAL EMISSIONS (Historical)
- EXCEPTION
  - Short Term - SO_2 and TSP lbs/hr basis
  - NET A Q BENEFIT

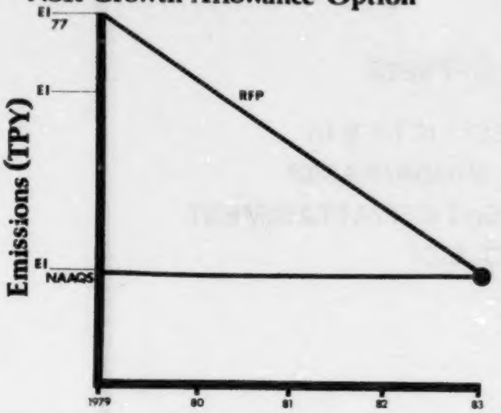
ACCOMODATIVE SIP

PROGRAM OFFSET - GROWTH ALLOWANCE SYSTEM

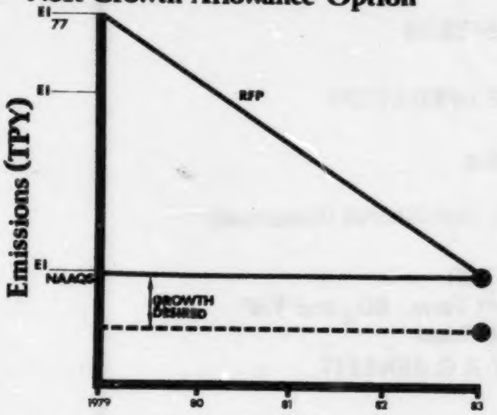
★ SIZABLE INITIAL DEPOSIT
  Below 1977 EI
  Beyond Attainment

★ IMPLEMENTATION
  Running Account
  Actual TPY Basis
  Debit New Source Approvals
  Credit Reductions As Occur
  Overrun - Option A

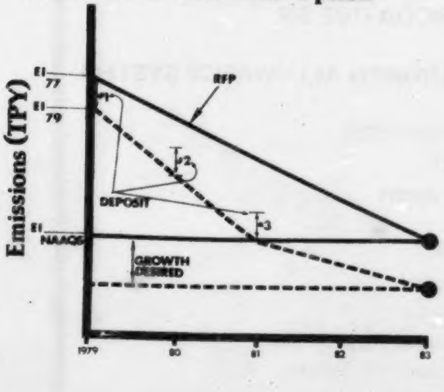
NSR Growth Allowance Option



NSR Growth Allowance Option



NSR Growth Allowance Option



New Source Review in 1979 SIPs

1. General Intent

The role of RFP in nonattainment area SIPs has already been discussed. NSR will also carry on a very important function which will complement and perhaps facilitate the cleanup of existing sources. It will likely be the principal mechanism in many areas by which advances in control technology are made and new opportunities to control existing sources are identified. NSR will also provide an instantaneous check on RFP. That is, the reductions obtained to offset new source growth must be consistent with the RFP schedule and the overall attainment requirement.

2. New Source Review - Part D Requirements

Section 172 identifies several 1979 plan requirements for nonattainment areas which are related to growth and NSR. Section 172(a)(1) states that SIP demonstrating attainment by the prescribed date is a prerequisite to approving major construction after July 1, 1979.[1] Section 172(b)(5) requires such 1979 plans to expressly identify and quantify the emissions allowed for the operation and construction of major sources in the area. Section 172(b)(6) calls for the development of an appropriate permit system for new major sources. (The details of this permit system are spelled out in more detail below in the Section 173 requirements.) Finally, Section 172 (b)(11)(A) requires that the 1979 plan develop a special new source evaluation program when attainment beyond 1982 (not to exceed 1987) is allowed for photochemical oxidants or carbon monoxide violations. This special program is to weigh the benefits and analyze the alternatives to approving this source relative to the need for attaining the oxidant and carbon monoxide NAAQSs as expeditiously as practicable.

Section 173 outlines the details of the NSR system called for in 172(b)(6). Section 173(1) identifies the two options for approving major construction without jeopardizing attainment. Section 173(1)(A) states that by new source operation total allowable emissions from existing sources, new minor sources, and the proposed source are less than those allowed under the SIP at the time of new source application so as to be consistent with RFP. Section 173(1)(B) alternatively allows approval of major construction if it would not cause or contribute to violating the Section 173(b)(5) allowance for growth. Section 173 also requires that major construction in a non-attainment area must meet the lowest achieveable emission rate (LAER), all other major sources under common ownership within the State must be in compliance with the applicable SIP, and the State must otherwise be carrying out the applicable SIP. Section 171(3) defines the term "lowest achieveable emission rate" for any source as that rate of emissions which reflects:

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[1] Section 110(a)(2)(I) further states that this sanction is only applicable to those sources/facilities which cause or contribute (emphasis added) to the relevant ambient violation.

(A) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or

(B) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent.

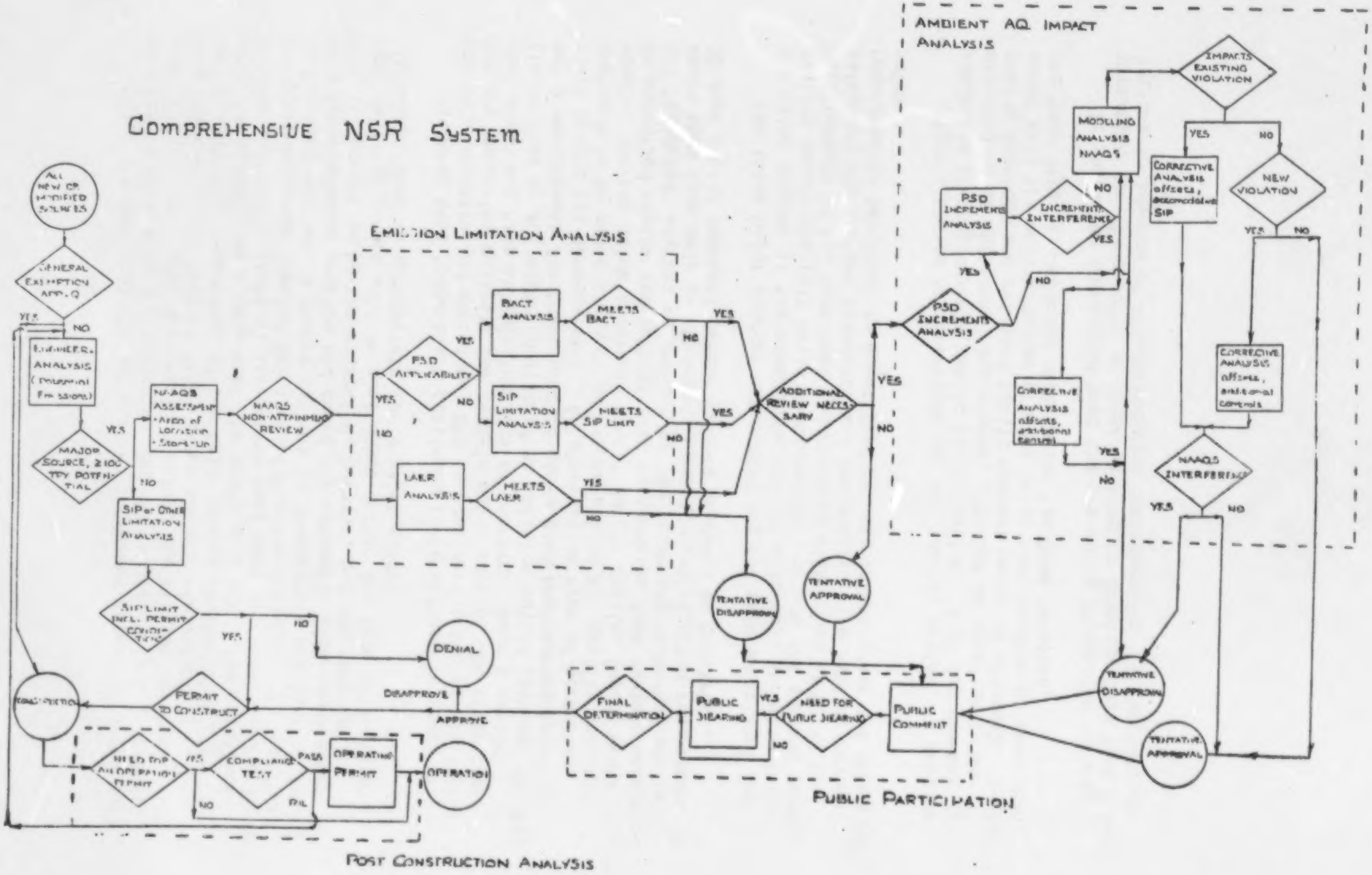
In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standard of performance.

3. Comprehensive NSR System

In general, EPA will not require submittals of comprehensive NSR packages as part of the 1979 SIP package. By a comprehensive preconstruction review, we mean a streamlined integration of all applicable air permit requirements including those for the Prevention of Significant Deterioration (PSD), Standards of Performance for New Stationary Sources (NSPS), review for New Sources of Hazardous Air Pollutants (NESHAP), and the 40 CFR 51.18 review against the ambient standards. Comprehensive NSR rulemaking is not likely to be completed in the near future, but Figure #1 has been included to provide those who wish to develop NSR regulations in the interim with EPA's best estimate to a comprehensive one-air permit NSR system. Only regulations requiring (1) LAER, (2) Statewide compliance, (3) alternative site evaluation within post-1982 attainment areas, and (4) NSR rules that maintain RFP will be required in the January 1, 1979, submittal. However, such regulations must be developed in conformance with the existing 40 CFR 51.18 requirements (i.e., mandatory public comment period and ability to require sufficient information from sources to determine their approvability).

Figure #1 shows that all new and modified sources except those specifically exempted will undergo at least some type of NSR. Minor sources (less than 100 TPY potential emissions) are identified under an initial engineering analysis (Box #A) and receive only an analysis to verify their anticipated compliance with the applicable SIP emission limits. Minor sources which will comply with such limits can, therefore, be granted construction approval without further delay.

FIGURE 1


COMPREHENSIVE NSR SYSTEM
ALL NEW OR MODIFIED SOURCES
GENERAL EXEMPTION APP.-Q
YES
NO
ENGINEER. ANALYSIS (Potential Emissions)
MAJOR SOURCE, ≥100 TPY POTENTIAL
YES
NO
NAAQS ASSESSMENT • Area of Location • Start-Up
NAAQS NON-ATTAINMENT REVIEW
SIP or OTHER LIMITATION ANALYSIS
SIP LIMIT INCL. PERMIT CONDITIONS
YES
NO
EMISSION LIMITATION ANALYSIS
PSD APPLICABILITY
YES
NO
BACT ANALYSIS
MEETS BACT
SIP LIMITATION ANALYSIS
MEETS SIP LIMIT
LAER ANALYSIS
MEETS LAER
YES
NO
ADDITIONAL REVIEW NECESSARY
TENTATIVE DISAPPROVAL
TENTATIVE APPROVAL
AMBIENT AQ IMPACT ANALYSIS
PSD INCREMENTS ANALYSIS
PSD INCREMENTS ANALYSIS
INCREMENTS INTERFERENCE
MODELLING ANALYSIS NAAQS
IMPACTS EXISTING VIOLATION
CORRECTIVE ANALYSIS offsets, accomodative SIP
NEW VIOLATION
CORRECTIVE ANALYSIS offsets, additional controls
CORRECTIVE ANALYSIS offsets, additional controls
NAAQS INTERFERENCE
TENTATIVE DISAPPROVAL
TENTATIVE APPROVAL
DENIAL
DISAPPROVE
APPROVE
PERMIT TO CONSTRUCT
CONSTRUCTION
NEED FOR AN OPERATION PERMIT
COMPLIANCE TEST
PASS
FAIL
OPERATING PERMIT
OPERATION
POST CONSTRUCTION ANALYSIS
FINAL DETERMINATION
PUBLIC HEARING
NEED FOR PUBLIC HEARING
PUBLIC COMMENT
PUBLIC PARTICIPATION

Major sources (100 TPY and more of increased potential emissions) must face a more detailed analysis. Box #B is primarily a geographic area screen ("107" area designations unless new air quality monitoring data required under Section "165" shows ambient violation(s)). This test essentially determines if the major source construction must apply LAER, BACT, or simply meet the applicable SIP. The specifics of what applicable limit(s) the source must meet are identified under the group of boxes labeled Emission Limitation Analysis. As mentioned in the next section, a source can opt to demonstrate his lack of impact to a nonattainment problem and avoid the automatic LAER requirement. This is thought to be the exception, however, and the geographic applicability screen will in most cases define the type of emission limitation that is appropriate for a major source.

Assuming that "potential" continues to be defined in terms of a source's uncontrolled emissions, EPA is considering the possibilities for not requiring analysis for certain major sources who after control would not have an emission rate of concern. Such a screen (identified by #C) might consist of an emission cutoff (perhaps 50 TPY) and a requirement for the source to use a good engineering practice stack height (as appropriate). An alternative type of screening approach is to use a standard and conservative air quality screening model. Sources below a certain specified air quality impact would receive an expedited review and perhaps even be exempted from further analysis. All "exempted" sources regardless of the screening technique employed would then face only an abbreviated public participation requirement (e.g., 30 days public comment) before gaining approval to construct.

For those major sources not qualifying for such exemptions (or all major sources if the exemptions are not allowed), an ambient air quality impact analysis would be necessary. Herein the ambient review requirements of PSD have been incorporated with those of 51.18 to safeguard the ambient standards and increments. The ambient review requirements pertinent to identified non-attainment areas are discussed later.

After a source has undergone the air quality review, it must be subjected to considerable public participation. A 30-day comment is expected to be the normal occurrence, although an opportunity for public hearings and extended public comment would be afforded. In no event will the entire review process delay construction by more than one year after a completed application has been received.

It should be emphasized that the preceding discussion is only presented for the benefit of those wishing to develop their Part D regulations in advance of the forthcoming comprehensive NSR regulations.

4. Applicability of Nonattainment NSR Requirements

In general, all major construction proposed after July 1, 1979, for any portion of a non-attainment area will be assumed to be subject to the full NSR requirements under Part D. Major construction means any new source or modification which would increase the potential for emission release by 100 TPY or more, regardless of reductions achieved elsewhere.

The NSR preconstruction requirements identified in Part D are to be implemented until the designated nonattainment area actually realizes the attainment mandate. This applies to violations of both the primary and secondary standards. These requirements are generally not applicable retroactively to recent major construction approvals issued before July 1, 1979. Such approvals were likely governed by EPA's Interpretative Ruling (offset policy) and were to have been taken into account in demonstrating attainment.

All NSR requirements are presumed applicable for the entire designated nonattainment area. This is consistent with the concept of areawide tracking of RFP. However, if a proposed source can make a firm demonstration that it would not cause or contribute to a non-attainment problem then such source could be exempt from the NSR requirements and the RFP accounting procedures. This demonstration may consist of a monitoring study to show that the proposed location or modification site is in a clean portion of the designated non-attainment area and a modeling study to show that the proposed construction would not impact on adjacent portions of the designated non-attainment area.

A slightly different NSR procedure is appropriate for those areas of proposed construction which are later identified as being non-attainment. That is, the preconstruction review under regulations for the prevention of significant deterioration (PSD) will typically require preconstruction monitoring data from prospective major sources. The data from these and other monitors (either existing or newly established by the State) can lead to the further identification of non-attainment areas not classified as such in 1978. After the formal non-attainment designation is made, States have up to nine months to develop appropriate attainment plans including the NSR requirements of Part D. However, until the time that a plan is approved, EPA's Interpretative Ruling of December 21, 1976, (as amended) is to be applied in the review of new sources.

Finally, EPA's Interpretative Ruling would apply to external construction that significantly impacts the non-attainment problem. Such external construction must be major, be proposed for areas outside the geographic boundaries of the designated non-attainment areas, and impact significantly through transport on the adjacent non-attainment area. If offsets for such a source are secured from the designated non-attainment area, they will not also count toward making RFP.

5. LAER Guidance

As mentioned, Section 171(3) defines LAER in terms of the "best SIP" limit or "best in practice" control that is achievable by the source undergoing review -- not to be less stringent than an applicable NSPS. Some guidance will now be given as to what regulations are to be considered as being the "best SIP" and what "in practice" control experiences are transferable for the proposed construction.

"Best SIP" means that limit of the highest stringency that the source is capable of meeting considering all plan limits "on the books." That is, if a plan has extraordinary regulatory measures incorporated into its SIP designed to preclude a certain source type from ever constructing, these need not define LAER. In addition, plans with best available control technology (BACT) requirements are not applicable in the abstract. Only where specific limits exist within these regulations or where a BACT-type regulation has been implemented for a similar source would this type of regulation be applicable. EPA promulgated requirements are, of course, part of the applicable SIP. Finally, "equipment standards" can substitute for emission limitations where the latter has typically not been prescribed. Note that the limits need only to have been prescribed for a source and existing in a SIP to be eligible for consideration. However, if a limit has not yet been tested through source operation, "achievability" may be more difficult to prove.

"In practice" means controls that have been demonstrated for that exact source type or one of similar general function with extreme similarities of gas stream, economics, etc. This interpretation does not preclude use of "control technology transfer." However, EPA feels that the need to offset new source emissions consistent with RFP will often persuade sources to voluntarily advance the "state-of-the art" for control technology. Thus, control transfer is not likely to be needed in most cases.

Considerable comment has been raised as to the need for an effective national clearinghouse to promote consistent LAER determinations and to provide a quick reference vehicle as to what represents good control of a specific source type. Most feel that such a system is necessary to keep the NSR community advised of the continual advances in regulations and field determinations that govern future LAER decisions. OAQPS already has a limited operation to provide this service on technology determinations including BACT and RACT as well as LAER. EPA is considering the possibilities for expanding this function primarily through contractor services. Such expansion would consist of a concentrated effort to establish an initial bank of information on many source types (including a compilation of recent field determinations, applicable SIP regulations, and general information obtained from the literature and industry on state-of-the-art controls) and arrange to update the bank on a continual basis. Such a data bank would serve to advise those desiring information concerning other LAER determinations and would help overcome the difficult problems of deciding when controls are achieveable (technically feasible). In order to help maintain an up-to-date clearinghouse, assistance will be needed from State and local agencies regarding their LAER decisions. In addition to maintaining such a system, OAQPS would be available to assist States in making unique determinations where available information is inadequate. Comments are welcome on such an idea, especially those with ideas for best procuring the necessary information on an initial basis and a regular basis thereafter.

6. Statewide Compliance

Section 173(3) requires that all other major sources (100 TPY potential) owned or operated in the same State by the applicant are in compliance with the applicable emission limits and standards under the Act. In responding to this requirement, EPA intends that reviewing agency ensure that major sources under common ownership or operation control with the proposed one in the same State be in compliance (or on enforceable schedules) with all established SIP limits at the time of new source approval. There is no need to establish limits beyond those necessary to ensure attainment.

7. NSR Regulatory Options

Section 173(1) outlines two options for accommodating major source growth in SIPs without jeopardizing the attainment mandate. Section 173(1)(A) allows a form of offset policy to be conducted on a case-by-case basis. In general, this offset regulation is decidedly more restrictive than is EPA's present Interpretative Ruling. In addition to subjecting sources on the basis of their increased emission potential, new major sources are required to offset not only their emissions but also those of the minor point sources which have come into the area since 1979 (which have not already been offset). More importantly, the decrease in allowable emissions that Section 173(1)(A) calls for must be consistent with RFP. This effectively changes the baseline for offsets from the stated SIP at the time of application to the attainment SIP since RFP can in no way jeopardize attainment.

In implementing the Section 173(1)(A) option, a reviewing authority must therefore keep the following criteria in mind. He must verify that: (1) the proposed reductions are not otherwise needed to provide for or maintain attainment; (2) the offsets would be transacted on a TPY actual basis;[2] (3) the offsetting reductions will be accomplished on or before the time of new source operation; (4) the reductions come from sources in the emissions inventory used for approved control strategy;[3] and (5) the amount of the proposed reductions is sufficient to offset both the emissions reductions directly associated with the proposed source construction and those emissions attributed to minor point sources that have come into the area since the last RFP milestone was met.

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[2] This is consistent with how RFP is primarily tracked and will require the establishment of new enforceable TPY limits on the reducing sources. An exception to this is when only short-term violations of the TSP or SO_2 standards are at stake. Then maximum emissions on a lbs/hour basis should be used together with a new air quality benefit criteria. Note that in the general case of TPY transactions does not have a net air quality benefit constraint. However, a reviewing authority would be ill-advised to approve new sources that worsen air quality trends since making RFP and attainment status are linked with air quality trends.

Utilization of the case-by-case offsets NSR option will not affect the shape of the RFP schedule as the next NSR option does. However, the permitting of new major growth in a non-attainment area does complicate the tracking procedures for RFP. In general, when satisfactory offsets under "173" are obtained, emission tracking will not be affected until the new sources come into operation or the offsetting reductions actually occur. This is true since no actual emissions would have occurred, nor would the SIP have allowed any net increase in emissions to occur. Figure 2 and Table 1 have been included to illustrate how new source approvals are to be taken into account when tracking RFP. It should be noted that when RFP is not being met, sanctions could be imposed that would override the permitting authority of systems developed under Section 173(1)(A) or Section 173(1)(B).

A second option open to the States for allowing major construction is described under Section 173(1)(B). A growth allowance system can be set up and major sources can be approved so long as they would not exceed the available growth allowance.[4]

Several requirements are inherent to implementing this program accomodation of new sources: (1) there must be a sizable amount of reductions accomplished by the time of system operation (note that reductions from 1977 to 1979 can be used toward the establishment of an initial growth account); (2) the reductions in the account must all be beyond those needed for attainment; (3) no major growth can be permitted beyond that accommodated within the growth allowance available at the time of source application;[5] (4) reductions as accomplished are eligible for addition to the growth allowance, whereas new sources as approved reduce the amount of allowance available for approving future new sources; (5) the available growth allowance is consumed or augmented on an actual TPY basis; and (6) no further major construction approvals can be issued when RFP is not otherwise met.

Many States which elect to operate the growth allowance system may also wish to plan for a specific amount (or even type) of growth over a certain period of time. A good mechanism for doing so is shown in Figure 3. Herein the dotted line shows the timely aquisition of additional reductions from existing sources (beyond attainment) so as to allow for a specified

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[3] Conceivably, the reviewing agency could accept offsets from non-inventoried sources overlooked in the 1977 emissions inventory, but as a minimum these offsets must be discounted in value by the overall percent control needed for attainment.

[4] It should be noted that EPA, if forced to promulgate a plan, will typically not set up such an allowance.

[5] Consequently, the plan should allow for the approval of new major sources to continue under the case-by-case offset option previously discussed.

TABLE #1

RFP AND GROWTH

YEAR	ACTION	MAXIMUM EMISSIONS (TPY)	ACTUAL EMISSIONS (TPY)	ALLOWABLE EMISSIONS (TPY)
1975		50,000	40,000	50,000
	#1 Approval (w/o offsets)	+ 5,000	---	+ 5,000
1976		55,000	40,000	55,000
	#2 Approval (w/o offsets)	+ 2,500	---	+ 2,500
	6% Increase in capacity	---	+ 3,000	---
1977		57,500	43,000	57,500
	#3 Shutdown	- 2,500	- 2,500	- 2,500
	6% Decrease in capacity	---	- 2,850	---
1978		55,000	38,000	55,000
	#5 Approval w/#4 offsets	---	---	---
	6% Increase in capacity	---	+ 2,850	---
1979		55,000	40,850	55,000
	#7 Approval w/#6 offsets	---	---	---
	RFP cleanup	-11,000	- 9,020	-36,500
1980		44,000	31,830	18,500
	RFP cleanup	-10,000	- 8,200	---
	4% Increase in capacity	---	+ 1,060	---
	#1 Operation at 15% approval	- 4,250	+ 750	- 4,250
1981		29,750	25,460	14,250
	RFP cleanup	- 8,000	- 7,000	---
	10% Decrease in capacity	---	- 1,350	---
	#2 Operation at 15% approval	- 2,125	+ 375	- 2,125
	#4 Offsets occur	---	- 2,500	---
	#6 Offsets (beyond attainment occur)	---	- 2,500	---
1982		19,625	12,465	12,125
	RFP cleanup	- 7,500	- 5,625	---
	#5 Operation at 15% approval	- 2.125	+ 300	- 2,125
	5% Decrease in capacity	---	- 300	---
1983		10,000	6,840	10,000
	#7 Operation	---	+ 2,500	---
	5% Increase in capacity	---	300	---
1984		10,000	9,640	10,00

---

[a] A 10,000 TPY EI is assumed to show attainment

[b] Until 1979 maximum emissions are assumed to equal allowable ones (i.e., SIP limits coincide with maximum source emissions and they are fully complied with)

[c] All cleanup performed to accomplish RFP is identified in the 1979 plan submission and is expressed in terms of allowable emissions

[d] Allowable emission reduction for RFP are translated into actual emission reductions by the following:

Actual Emissions Before Cleanup - Allowable emissions before cleanup - Total Cleanup = Change to Actual Emissions

Figure 2

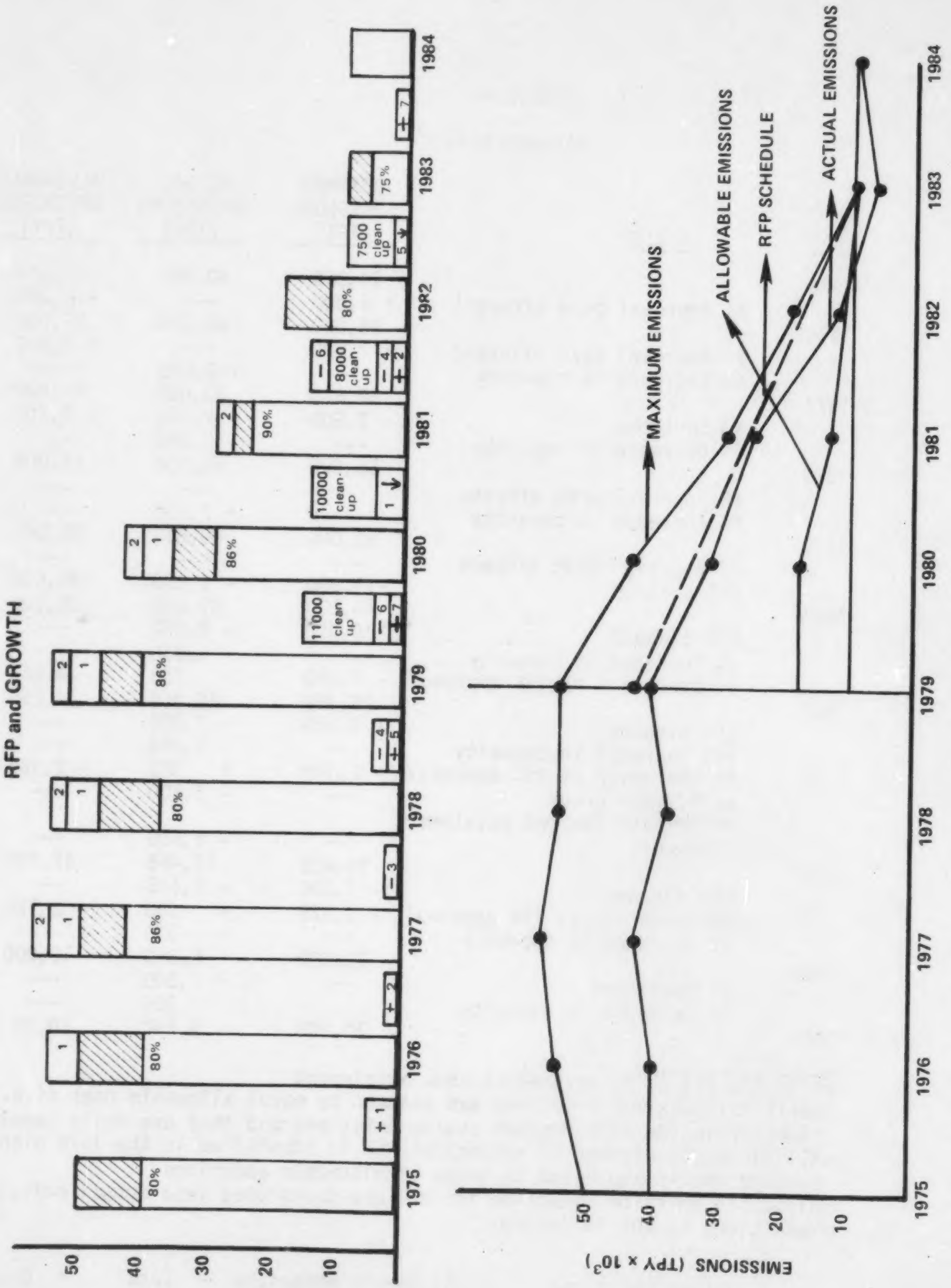
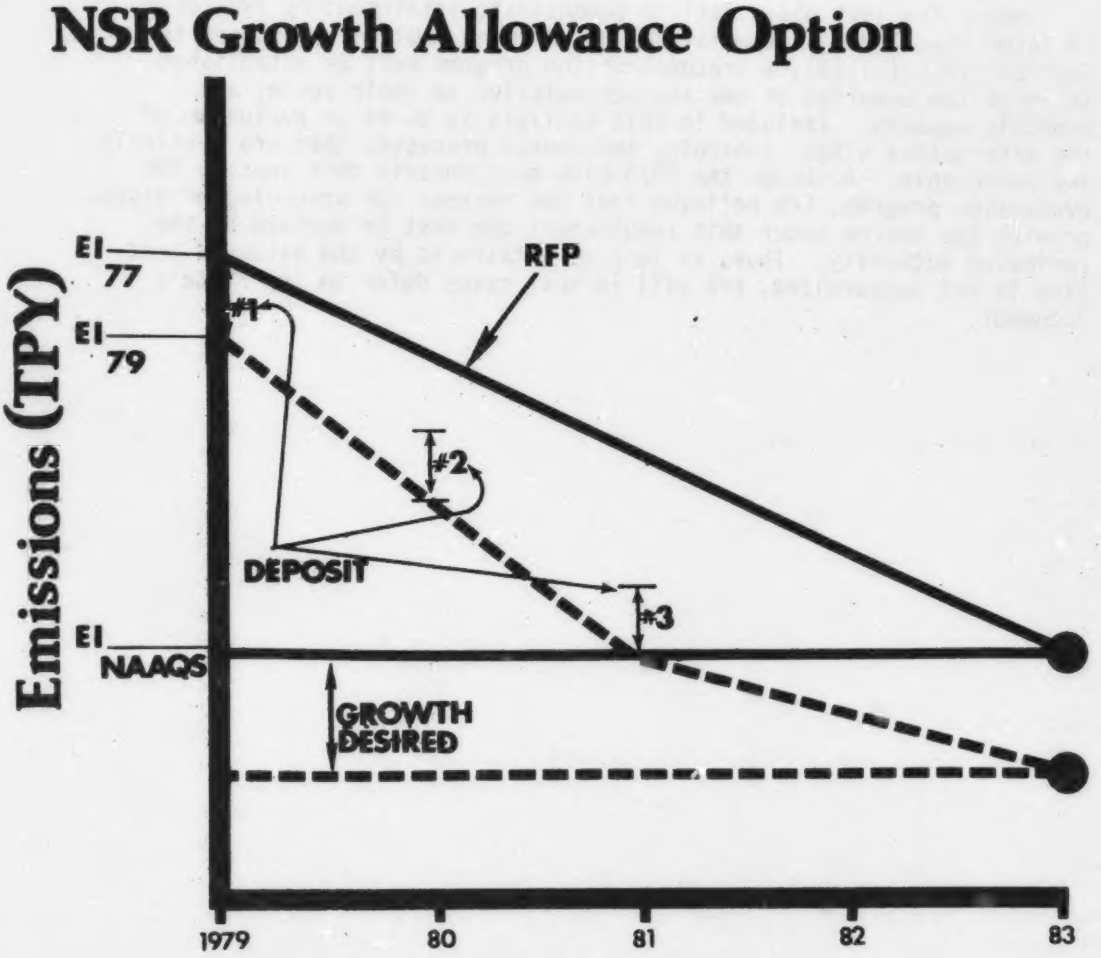

RFP and GROWTH
EMISSIONS (TPY x 10^3)
50
40
30
20
10
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
80%
+ 1
1
80%
+ 2
2
1
86%
− 3
2
1
80%
− 4
+ 5
2
1
86%
11000 clean up
− 6
+ 7
2
1
86%
10000 clean-up
1
2
90%
− 6
8000 clean up
− 4
+ 2
80%
7500 clean up
5
75%
+ 7
MAXIMUM EMISSIONS
ALLOWABLE EMISSIONS
RFP SCHEDULE
ACTUAL EMISSIONS

Figure 3


NSR Growth Allowance Option
Emissions (TPY)
EI 77
EI 79
EI NAAQS
RFP
#1
#2
#3
DEPOSIT
GROWTH DESIRED
1979
80
81
82
83

amount of desired growth. Note that the RFP schedule itself does not change when a growth allowance scheme is built in. The milestones of the RFP schedule must still be met, but now in terms of total actual emissions from existing and new sources. Tracking of new source emissions will proceed as described under the case-by-case NSR option.

8. NSR Program for Post 1982 SIPs

Where the 1979 plans fail to demonstrate attainment by 1982 (but no later than 1987), a special NSR requirement applies. Pursuant to Section 172(b)(11)(A), a preconstruction program must be established to weigh the benefits of new sources relative to their social and economic impacts. Included in this analysis is to be an evaluaton of the alternative sites, controls, and source processes that are available and reasonable. Although the 1979 plan must contain this special NSR evaluation program, EPA believes that the reasons for approving or disapproving the source under this requirement can best be decided by the reviewing authority. Thus, as long as attainment by the extended deadline is not jeopardized, EPA will in most cases defer to the State's judgment.

Miscellaneous Topics

MISCELLANEOUS TOPICS

The actual workshops that were given from February 28 through March 10 and the previous edition of this compilation covered a number of miscellaneous topics concerning requirements for SIP revisions not directly associated with the nonattainment area plans. The topics were--

--Tall stacks,

--Permit fees,

--Assurance of plan adequacy, (SIP dependency on clean fuels)

--State board composition,

--Interstate pollution,

--Public notification,

--Maintenance of pay,

--Air pollution episode reporting, and

--Prevention of significant deterioration.

These requirements are in the formative stages as compared to the other material presented at the workshop and thus contain a number of issues that have not yet been resolved. EPA wanted to provide preliminary ideas concerning those topics and obtain reactions to them. Material on these topics have been deleted from this edition of this compilation and from the videotape of the workshop. EPA will in the future circulate additional guidance on these topics.

Summary of
Clean Air Act Amendments of 1977

Summary of the Clean Air Act Amendments of 1977

Title I

Part A

Section 103 - Training is amended to prevent EPA from charging air pollution control agencies for training and to provide for acceleration of training efforts.

Section 105 - Grants is amended to provide each State with a minimum of 1/2% of the total grant funds appropriated annually; to prevent the loss of grant funds if a general, non-selective reduction in expenditures is made in a State budget; and to prevent disapproval, revocation, or reduction of funds without prior notice and an opportunity for public hearing in the affected State.

Section 107 - Air Quality Control Regions is amended by adding new subsections which require each State to submit to EPA within 120 days a list identifying the status of each AQCR with respect to compliance with NAAQS. It further requires EPA to promulgate such lists 60 days later with whatever modifications EPA deems necessary. Provision is made for revision of the list and for redesignation of AQCR's within the State.

Section 108 - Air Quality Criteria and Control Techniques is amended to require EPA to consider cost of installation and operation, energy requirements, emission reduction benefits, and environmental impact of emission control technology in the preparation of control techniques documents. EPA is further required to revise and reissue criteria relating to short-term NO_2 concentrations within six months. EPA must also publish within 180 days information on procedures for reducing pollutant emissions - including inspection and maintenance, vapor controls, public transit and carpool programs, on-street parking control, and retrofit of heavy duty vehicles - and must assess the relative effectiveness and the energy and economic impact of these measures.

Section 109 - National Ambient Air Quality Standards is amended to require EPA to establish an independent scientific committee to review air quality criteria and the NAAQS not later than December 31, 1980 (and at subsequent intervals not exceeding five years) and recommend revisions in the criteria and standards as may be appropriate. EPA must also promulgate a short-term primary standard for NO_2 (less than 3 hour) within one year.

Section 110 - Implementation Plans is amended:

1. To require SIP's to include permit programs to prevent significant deterioration and non-attainment of standards and also to include air quality maintenance requirements.

2. To prohibit EPA from requiring indirect source review programs, except with respect to Federally funded projects. Such existing programs, however, may remain in effect at the discretion of the States. It also authorizes Governors of States to temporarily suspend SIP regulations which restrict on-street parking.

3. To restrict land use regulations to those needed to assure attainment and maintenance of NAAQS and prevent significant deterioration of air quality.

4. To require the owners and operators of major stationary sources to pay any fees required to obtain a permit.

5. To authorize EPA to delegate enforcement authority to local governments for plans promulgated by EPA.

6. To allow revision, upon a Governor's request, of strategies requiring tolls on bridges located entirely in one city with alternate strategies providing for equivalent emission reductions to be submitted to EPA within one year.

7. To allow suspension of SIP requirements (not to exceed four months) for fuel burning sources if necessitated by an energy or economic emergency.

Section 111 - Standards of Performance for New Stationary Sources is amended to require the best system of continuous emission reduction on new or modified fossil fuel fired steam generators regardless of fuel quality. EPA must promulgate a complete list of major stationary source categories within one year and standards of performance for the entire list no later than four years thereafter. Before promulgating a list or standards, EPA must consult with the States. The Governor of a State has authority to petition to compel the Administrator to issue new source performance standards for industries which have not yet been covered by such standards, to revise priorities for standard setting, to issue revised standards when better technology becomes adequtely demonstrated, or to issue standards for unregulated hazardous pollutants. If an emission standard is not feasible, EPA may prescribe a design, equipment, work practice, or operational standard. EPA promulgations for designated pollutants under Section 111(d) must consider the remaining useful life of such sources. Stationary sources owned and operated by the Federal government are no longer exempt from State enforcement. A source owner may apply for a waiver to use innovative continuous emission control technology. A waiver may not extend beyond seven years after the date granted or four years after operation is commenced.

Section 112 - National Emission Standards for Hazardous Air Pollutants is amended to allow EPA to prescribe a design, equipment, work practice, or operational standard to protect public health from hazardous materials where an emission standard is not feasible.

Section 113 - Enforcement is amended:

1. To allow EPA to issue orders prohibiting construction or modification of major stationary sources in non-attainment areas and to authorize the courts to impose civil penalties of up to $25,000 per day for violations of the Act.

2. To authorize a State (or EPA after 30 days notice) to issue enforcement orders which extend beyond the date specified for attainment of the NAAQS. Such orders shall require compliance as expeditiously as practicable, but no later than July 1, 1979, unless the order establishes a delayed compliance penalty. Orders are limited to not more than a three year delay, except in cases of innovative technology (five years), coal conversion extension, or smelter orders. The State retains primary responsibility for enforcement. The issuance of a delayed compliance order serves as a notice for purposes of noncompliance penalties if the affected source does not comply by the applicable date. A source receiving an order must comply with all interim requirements which the Administrator deems reasonable and practicable. The Administrator may revoke an order if he determines that the conditions upon which the order was based no longer exists or that the source is in violation of interim requirements. Where a source wishes to comply by replacing the facility, terminating operations or completely changing the production process it may receive an extension requiring no interim steps before final compliance if it agrees to post a bond or surety equal to the cost of compliance had the owner decided to comply by installing control equipment.

3. To incorporate the provisions of former Section 119 (Energy-related Authority) for sources which cannot meet SIP requirements because of a coal conversion order and to provide an extension in compliance orders to December 31, 1980. Additional authority

is available for extensions up to December 31, 1985. Sources ordered to convert can begin to burn coal only when they can do so without causing or contributing to concentrations of any pollutant in excess of primary air quality standards and in compliance with the applicable SIP.

Section 114 - Inspections is amended to require the Administrator to give reasonable notice to the States prior to carrying out an entry, inspection or monitoring, when the Administrator intends to check on compliance with a standard adoped by the State and approved by the Administrator. The Administrator must also inform the State of the purpose for his action but the Administrator's failure to comply will not be a defense in an enforcement action; nor would it make evidence obtained in violation of this provision inadmissible.

Section 115 - International Air Pollution is added to allow the Administrator to trigger a revision of an SIP under Section 110(a)(2)(H) upon the petition of an international agency or the Secretary of State if he finds that emissions originating in a State endanger the health or welfare of persons in a foreign country, provided said country has given the U.S. the same rights.

Section 118 - Control of Pollution from Federal Facilities is added to require Federal facilities to comply with all applicable State and local substantive and procedural (i.e., permit requirements) air pollution requirements. Suits brought under the Section may be removed to Federal court, and no judicial review of an EPA action in State courts is authorized. Exemptions may be granted by the President in the interest of national defense.

Section 119 - Primary Nonferrous Smelter Orders is added to authorize the use of supplementary control strategies on a temporary basis for existing nonferrous smelters. Existing nonferrous smelters may be granted up to two extensions (not exceeding five years each) for the use of intermittent control systems if the Administrator finds that imposition of continuous emission controls would result in a cessation of smelter operations. During the first five year extension, a smelter using supplemental controls on the date of enactment need not employ additional continuous controls. In addition, public hearings are not required before issuance of the extension, except in certain circumstances. Prior to granting the second five year extension, there must be notice and a public hearing to determine whether ultimate emission limitations are reasonably available.

Section 120 - Non-compliance Penalty is added to require the States or the Administrator to assess and collect non-compliance penalties.

Using the variables set forth in the Amendment, the non-compliance penalty would be calculated on the basis of the costs a non-complying source avoids by delaying compliance. Specifically, the calculation of the non-compliance penalty must consider the capital costs of compliance and debt service over a normal amortization period not to exceed ten years, operation and maintenance costs foregone, and any additional economic value of a delay. In essence, the penalty would reflect financial savings realized by the firm as a result of non-compliance with the law.

Section 121 - Consultation is added to require a State to consult with a local government prior to adoption of SIP requirements or enforcement provisions which would affect that local government. The consultation must be done in accordance with regulations promulgated by EPA.

Section 122 - Unregulated Pollutants is added to require the Administrator to determine within one year (two years for radioactive pollutants) whether or not emissions of radioactive pollutants, cadmium, arsenic and polycyclic organic matter may endanger public health and, if so, to list the substance in accordance with Section 108(a)(1) (Criteria Pollutant), 112(b)(1) (NESHAPS), or 111(b)(1)(A) (NSPS). For radioactive pollutants, the Administrator must coordinate with the Nuclear Regulatory Commission. EPA is further directed to study the effects of these unregulated pollutants and, in particular, the formation of sulfates.

Section 123 - Stack Heights is added to specify that the amount of emission reduction required under the SIP shall not be affected in any way by stack heights that exceed good engineering practice (not to exceed two and one-half times the height of the source) or by any other dispersion technique, including intermittent or supplemental controls that vary with atmospheric conditions. Exempt from this provision are stack heights or dispersion techniques in use before the date of the 1970 Clean Air Act Amendments. Also, for Federally-owned coal-fired steam electric generating units in operation before July 1, 1957, the entire stack height may be taken into account if its construction contract was awarded before February 8, 1974. The Administrator must within six months promulgate regulations to carry out these provisions.

Section 124 - Assurance of Adequacy of State Plans is added to require that, not later than one year after enactment, each State review its SIP relating to major fuel burning sources to determine the extent to which its plan is dependent upon petroleum products, natural gas, and coal not locally available and submit its findings to the Administrator. EPA must review these submissions and require the SIP to be revised if the Act's requirements will not be met; the Governor must be consulted.

Section 125 - Measures to Prevent Economic Disruption or Unemployment is added to prevent economic disruption by authorizing the President, the Administrator, or the Governor to require major fuel-burning stationary sources not in complaince with an implementation plan, or which are under a coal conversion order, to use local or regional coal while still complying with requirements necessary to assure compliance with the Clean Air Act.

Section 126 - Interstate Pollution Abatement is added (partially as a replacement for Section 115) to prevent major sources in one State from interfering with attainment and maintenance of air quality standards in another State. Notice must be given to adjacent States of new or existing sources that might have an adverse air quality impact and such States or political subdivision may petition EPA that the source would cause interference. EPA then has 60 days to respond and if a violation is discovered, EPA must proceed to abate the pollution as a violation of the host State's SIP. A delayed compliance order would be available to a source unable to comply with the requirements of this provision after three years, with a delayed compliance penalty.

Section 127 - Public Notification is added to require the States to include in their SIP's measures to notify the public of air pollution levels and to educate the public as to the hazards of such levels and measures which can be taken to improve air quality. EPA may make grants to States and localities to implement this Section.

Section 128 - State Boards is added to require each State to include in its SIP, by August 7, 1978, requirements that any board which approves permits or enforcement orders must consist of a majority of members who represent the public interest and do not derive a significant portion of their income from persons subject to the board's actions.

Part B

Sections 150-159 - Ozone Protection is added to require EPA to study the cumulative effects of substances, practices and processes which may affect stratospheric ozone and to contract with the National Academy of Sciences to submit a report on this subject to Congress by Janaury 1, 1978. Other Federal agencies are also required to participate in activities relating to research and monitoring with reports to EPA and Congress required by Janaury 1, 1978, and biennially thereafter. EPA must promulgate regulations if any substance, etc. may reasonably be anticipated to affect the stratosphere and endanger public health or welfare and must report to Congress by January 1, 1978, (interim) and by January 1, 1980, (final) on regulatory progress. States - and other political subdivisions - may regulate halocarbons as propellants in aerosol spray containers as they see fit but are preempted from regulating other aspects of ozone or agents causing stratospheric harm unless their regulations are identical to Federal regulations.

Part C

Sections 160-169 - Prevention of Significant Deterioration of Air Quality is added to establish three land classifications for allowable increases of TSP and SO_2 in areas where air quality is cleaner than required by ambient air quality standards. All clean air areas would initially be designated Class II, with the exception of certain areas which would receive the increased protection of Class I designation. Class I would include all international parks; national wilderness area; and national memorial parks larger than 5,000 acres; and each national park larger than 6,000 acres in existence on August 7, 1977. In addition, the Federal land manager is required to review national monuments, national primitive areas and national preserves and recommend redesignation to Class I where appropriate to protect air quality-related values.

States, after consulting with the Federal land manager, could redesignate Class II lands to Class I or to the less restrictive Class III. National monuments, national primitive areas, national preserves, national wild and scenic rivers, national wildlife refuges, national lakeshores, national seashores, new national parks, national wilderness areas and any other new areas created in these categories after enactment could not be redesignated to Class III if the area in question is larger than 10,000 acres.

Allowable increments of pollution above baseline concentration are set by statute for sulfur dioxide and particulates. Within two years States must submit plans establishing increments or other means of preventing significant deterioration from nitrogen oxides, hydrocarbons, carbon monoxide, and oxidants. EPA must approve the plan within four months if it meets applicable requirements; otherwise, EPA must propose a plan for the rejected State within four months of the disapproval. States may exempt certain emissions from coal conversions, natural gas curtailments, temporary construction, and foreign sources from being counted against the increment. Permits would be required for construction of facilities falling into one of 28 source categories listed if the source has the potential to emit more than 100 tons per year of an air pollutant, and for any other source which could emit more than 250 tons per year.

Specific increments for SO_2 and particulates are as follows (all numbers in micrograms per cubic meter): Class I SO_2--annual arithmetic mean, 2; 24-hour maximum, 5; three-hour maximum, 25; Class I particulates--annual geometric mean, 5; 24-hours, 10; Class II SO$_2$--annual, 20; 24-hour, 91; three-hour; 512; Class II particulates--annual, 19; 24-hour, 37; Class III SO$_2$--annual, 40; 24-hour, 182; three-hour, 700; Class III particulates--annual, 37; 24-hour, 75. In no case could pollutants exceed ambient standards.

Section 169A - Visibility Protection for Federal Class I Areas is added to prevent any future, or remedy any existing, impairment of visibility in mandatory Class I areas which result from man-made air pollution. The Secretary of the Interior is to identify, within six months, all mandatory Federal Class I areas where visibility is an important value of the area. The Administrator shall within one year after the date of enactment, and after consultation with the Secretary of the Interior, promulgate a list of such areas to receive visibility protection provided by this Section.

The Administrator is required to report to Congress, within eighteen months, the results of a study to: (1) establish methods for determining and measuring visibility impairment; (2) establish modeling techniques or other methods for determining contribution of man-made air pollution to visibility impairment; (3) report on methods for controlling air pollution which results in visibility impairment; (4) identify categories of sources and types of air pollutants which may reasonably be anticipated to cause or contribute significantly to impairment of visibility.

Within 24 months the Administrator is required to promulgate regulations to assure reasonable progress toward meeting the national goal. The regulations shall provide guidelines to the States for the revisions of implementation plans taking into account the recommendations of the report to Congress on techniques and methods for implementing this Section. Each State will identify the sources that impair visibility and fall within the requirements of this section.

For sources which significantly impact upon visibility in Federal Class I areas, the States must require the "best available retrofit technology," taking into account the cost of compliance, energy impacts, existing controls at the source, etc., and establish the appropriate emission limitation on a source-by-source basis. EPA will provide guidelines for "best available retrofit technology" for all power plants over 750 megawatts.

Part D

Sections 171-178 - Plan Requirements for Non-attainment Areas is added to specify the following provisions:

1. The existing EPA emissions offset policy remains in effect until July 1, 1979, unless States qualify for a waiver. Requirements for a waiver include RACT for existing sources, LAER for new sources, and a demonstration that there will be reductions in emissions equivalent to what would be achieved by EPA's offset ruling.

2. SIP revisions are required for all non-attainment areas designated under Section 107(d).

3. After July 1, 1979, States must revise their SIP's to assure that areas will meet national ambient air quality standards for all pollutants by December 31, 1982, or by December 31, 1987, for photochemical oxidants or CO if the 1982 date cannot be met using all reasonably available measures. A second plan revision must be submitted by July 1, 1982, to require the implementation of enforceable measures to ensure attainment by 1987; such measures include a mandatory inspection and maintenance program.

4. The SIP revision must specify the amount of new source growth which will be permitted; new sources must achieve the lowest achievable emission rate, reflecting the most stringent emission limitation which is contained in the SIP of any State for such class or category or source or the most stringent emission limitation which is achieved in practice, whichever is more stringent. SIP must require RACT for existing sources which will result in annual incremental reductions in emissions sufficient to attain the applicable NAAQS by the specified attainment date. The SIP would also have to contain emission limitations, schedules and other measures to assure compliance by the applicable dates.

5. Within six months after enactment, for each AQCR which would not attain CO or photochemical oxidant standards by July 1, 1979, the State and elected officials of affected local governments must jointly determine which elements of the revised SIP will be planned and implemented by the State and which by the local governments or regional agencies, or combination thereof. The locals have six months from enactment to designate an organization of local governments and get it certified by the State to carry out the planning; if no such designation is made within the six months, the Governor shall designate an areawide agency or a State agency to do the planning. Preference is expressed for local planning, and that the local planning organization be the agency handling areawide transportation planning or air quality planning, or both. There also is a requirement for coordiantion and interrelating air quality planning and transportation planning.

6. EPA may make 100 percent grants to local government agencies with transportation or air quality planning responsibilities to pay for the cost of transportation control planning, to supplement funding already available from Federal programs.

7. There are sanctions for noncompliance so that a State would lose its highway funds (except for transit, safety, or air quality related transportation projects) where the Governor has not submitted a revision by July 1, 1979, or that reasonable efforts toward submitting such a SIP are not being made; this also applies to the 1982 SIP revision. Where the State or local governments are not implementing a SIP, they cannot receive any grants under the Act. There is a requirement for Federal agencies not to take any action including making any grant that does not conform to an approved SIP, nor can any transportation planning agency give approval to anything which does not conform to the SIP. Priority must be given for programs with air quality transportation consequences to the implementation of SIP's necessary to achieve and maintain air quality standards.

8. Non-attainment States may adopt California car standards, provided that California and such States adopt such standards at least two years before the model year, in accordance with EPA regulations.

9. Within nine months of enactment, EPA has to publish guidance documents to assist States in implementing the requirements regarding lowest achievable emission rates; these must be revised at least every two years.

Title II

Section 202 - Establishment of Standards is amended to specify the following provisions:

1. Establishes interim automotive emission standards and requires final standards by 1981 as shown in the following table:

Automotive Emissions Standards
(grams/mile)

	1970 Act		1977 Amendment		
	1975(a)	1977(b)	1978-79	1980	1981
HC	0.41	1.5	1.5	0.41	0.41
CO	3.40	15.0	15.0	7.00	3.40(c)
NO_x	0.40	2.0	2.0	2.00	1.00(d)

(a) Originally mandated standards amended in 1974 to become final in 1978.
(b) Interim standards as a result of extensions.
(c) With possible two-year waiver to 7.0 gpm.
(d) With 0.4 as a research goal.

2. Requires as a condition of certification of new motor vehicles or engines that the manufacturer establish to the satisfaction of the Administrator that emission control systems used will not cause or contribute to an unreasonable risk to public health, welfare or safety.

3. Requires auto manufacturers to develop cars which demonstrate the technology for 0.4 grams/mile NO_x standard.

4. Authorizes EPA to prescribe fill pipe standards for new motor vehicles to assure effective connection with certified vapor recovery systems.

5. Requires EPA to consider use of onboard hydrocarbon control technology on new vehicles to minimize the necessity for vapor recovery requirements, and to promulgate such standards if it makes certain findings. The provision authorizing the Secretary of Transportation to disapprove EPA regulations under this Section is deleted.

6. Requires the Administrator of EPA to revise for model year 1978 the existing evaporative emission test procedures to measure hydrocarbon emissions for the vehicle as a whole. If such a revision is not feasible by 1978 for heavy duty engines and vehicles, it may be delayed until it becomes feasible.

7. Requires EPA to develop emission regulations for heavy duty vehicles. For the years 1979-1982 interim standards for HC and CO are established with statutory HC and CO standards becoming effective in model year 1983. The statutory NO_x standard becomes effective in model year 1985. The statutory standards mandate a 90% reduction from baseline for HC and CO and a 75% reduction from baseline for NO_x.

8. Requires a nonconformance penalty to be set at a level which will eliminate the competitive advantage, if any, for the manufacturer of a nonconforming heavy duty vehicle or engine.

9. Requires the achievement of statutory standards by motorcycles, but requires the Administrator to consider the need for achieving equivalency of emission reductions or emission standards between motorcycles and other new motor vehicles. Thus motorcycles could adhere to the required percentage reductions for HC and CO but meet the same emission standards in grams per mile of NO_x as automobiles.

Section 203 - Prohibited Acts is amended to broaden the prohibition against removal or tampering with emission controls to cover independent auto repair operations.

Section 205 - Penalties is amended to establish a civil penalty of $2,500 for any tampering by an independent repair operation.

Section 206 - Testing and Certification is amended to allow the Administrator to exempt vehicle manufacturers with projected annual U.S. sales of 300 vehicles or less from the requirement for 50,000 mile certification testing of such vehicles. Also suspended until 1981 is the implementation of high altitude regulations. Cars produced in 1981-83 must meet standards based on percentage reduction no greater than those for all cars based on high altitude emissions from 1970 model cars operating at high altitudes. For 1984 and thereafter cars must meet statutory emission standards at all altitudes.

Section 207 - Compliance by Vehicles and Engines in Actual Use is amended to:

1. Set the 207(b) performance warranty at 24 months or 24,000 miles. During this warranty period, the vehicle manufacturer would be required to bring into compliance with emission standards, any car which failed an inspection and maintenance test. The warranty could be invalidated only upon a showing by the manufacturer that the owner did not perform the required maintenance or repair as set forth in the owner's manual or abused the vehicle in its operation. Requisite repairs and maintenance could be performed by an establishement (including an independent garage or service station) that uses parts certified in accordance with Section 207(a). After the 24 months or 24,000 mile warranty terminates, the performance warranty on the emission control system under Section 207(b) would require the repair or replacement only of an "emission control device" or "component designed for emission control." The vehicle manufacturer's warranty after 24,000 miles, thus, would be limited to the catalytic converter, thermal reactor, or other component installed on or in a vehicle for the sake or primary purpose of reducing vehicle emissions and would be invoked in the event of failure of the vehicle to meet emission standards at any time up to 60 months. Such limitation does not apply to Section 207(a) warranties or to Section 207(c) recall actions.

2. Clarify that it is a prohibited act for new motor vehicle manufacturers to fail to comply with the terms of a warranty required by this Act.

3. Require that the dealer furnish to the purchaser of any new vehicle a certificate that such vehicle conforms to the emission standards applicable to it. This Section also requires that if at any time within the duration of the warranty period under Section 207(b) a motor vehicle fails an in-use emission test such nonconformity shall be remedied by the manufacturer

at the cost of the manufacturer. Such in-use emission test may be adopted by any State as part of its SIP and may be applied for purposes of this Section at any time from immediately after sale to the end of the specified warranty period.

Section 209 - State Standard is amended to:

1. Authorize the Administrator to grant the State of California a Section 209 waiver from Federal preeemption for a set of standards which he determines are in the aggregate as protective of public health and welfare as the Federal standards.

2. Specify that whenever a parts certification program is promulgated by the Administrator, States and political subdivisions will be preempted from adopting or enforcing any parts testing or certification program. This provision does not apply to California if it has more stringent emission standards than Federal requirements.

Section 210 - State Grants is clarified to allow reimbursement to States for money expended on inspection and maintenance programs prior to approval of the State grant.

Section 211 - Regulation of Fuels is amended to ensure that no gasoline additives which have been introduced in recent years will impair the effectiveness of emission control systems, by calling for the removal (by September 15, 1978) of any additive introduced into gasoline or increased in concentration after January 1, 1974, but prior to March 31, 1977. The Administrator may waive this prohibition on additives if he determines that an applicant has established that such a fuel or additive or a given concentration of such additive will not cause or contribute to a failure of the emission control device or system to meet the appropriate emission standard over its useful life. If the Administrator finds that the additive or a given concentration of such additive will cause or contribute to the failure of an emission control device or system to meet the appropriate emission standards over its useful life he shall prohibit such additive or restrict its concentration during the period from six months after enactment of September 15, 1978. Because of the particular concern over the adverse effects of MMT on the performance of emission control systems, this provision limits the maximum concentration of manganese in a gallon of gasoline to .0625 grams after November 30, 1977. Without a waiver the use of manganese in gasoline will be prohibited as of September 15, 1978. Also under this provision, various classes of small refineries will, until at least October 1, 1982, be exempt from any lead phasedown regulation requiring reductions in the average lead content of their total gasoline pool below the levels specified. The specified levels decline inversely with size of the refinery. For the purposes of this provision, a small refiner is defined as a refiner with a total combined crude oil or bonafide feed stock capacity (as determined by the Administrator) of 137,000 barrels per day or less. A small refinery of a small refiner is defined as only that fraction of the capacity of a refinery with 50,000 barrels per day or less crude oil or bonafide feed stock capacity (as determined by the Administrator), which was in operation or for which a significant portion of the construction had been completed as of October 1, 1976. After October 1, 1982, the Administrator may promulgate regulations reducing the average lead content of the total gasoline pool of small refineries below those levels prescribed in the legislation.

Section 214 - Study of Particulate Emissions from Motor Vehicles is added to require EPA to study and report to Congress on the effects of particulate emissions from mobile sources including fugitive dust (e.g., tire debris) on health and welfare. The report must include recommended standards and/or control techniques.

Section 215 - High Altitude Performance Adjustments is amended to provide that adjustments to automobiles are not to be prohibited by Section 203(a) if they are performed in accordance with manufacturer instructions which have been approved by the Administrator. Such instructions shall insure an emission control performance for each pollutant which is at least equivalent to that which would result if no adjustments had been made. With regard to used automobiles, the baseline for determining equivalent emission performance shall be an automobile which has been properly maintained and restored. High altitude adjustments are permitted only in high altitude States. Furthermore, after January 1, 1981, adjustments are permitted only in those high altitude States which have implemented inspection and maintenance programs in their non-attainment areas.

Section 226 - Carbon Monoxide Intrusion into Sustained Use Vehicles is added to require EPA together with DOT to report within one year on carbon monoxide levels inside sustained-use vehicles such as school buses, taxis, and police cruisers including the sources and means of control of such pollutants.

Section 231 - Aricraft Emission Standards is amended to authorize the DOT to disapprove any aircraft emission standard promulgated by EPA if the standard would create a hazard to aircraft safety upon a finding by the Secretary of the Department of Transportation.

Title III

Section 302 - Definitions is amended to include a series of meanings for new terms used throughout the Act including:

1. Federal Land Manager: The Secretary of the Department which has authority over any specific Federal land.

2. Major Stationary Source: Any stationary source with an annual potential to emit 100 tons of any pollutant (same for major emitting facility).

3. Emission Limitation: The requirement that limits the quantity, rate or concentration of emissions on a continuous basis.

4. Standard of Performance: Means continuous emission reduction, including operation and maintenance.

Section 303 - Emergency Powers is amended to authorize the Administrator to commence a civil action in an emergency situation to protect public health and require that suit must be brought within 24 hours of the issuance of an order and the court must uphold such order within 48 hours. EPA must consult with State and local governments in order to confirm the correctness of the information on which action proposed to be taken is based and to ascertain the action which such authorities are or will be taking.

Section 304 - Citizen Suits is amended to allow suits for failure to obtain permits for construction of major facilities under Part C (Significant Deterioration) or Part D (Non-attainment) and to allow State and local authorities to bring suit against the Federal government and its agencies in relation to air pollution control and abatement.

Section 305 - Representation in Litigation is amended to direct the Department of Justice to use the memorandum of understanding with EPA dated June 13, 1977, as the basis for Justice representing EPA in court.

Section 307 - Administrative Procedures is amended to establish, effective November 14, 1977, procedural guidelines for EPA rulemaking relating to standards, implementation plans, penalties, etc.

Section 316 - Sewage Treatment Plants is added to provide EPA with the authority to withhold or condition grant approvals for treatment plant construction if such plants do not comply with NSPS and NESHAPS requirements or if an increase in plant capacity may result in new source emissions (direct or indirect) not in conformance with provisions of the SIP.

Section 317 - Economic Impact Assessment is added to direct EPA to prepare an economic impact assessment on various proposed regulations convering at least five points, but this is not a requirement creating any new rights in court other than a suit to complete an impact statement.

Section 318 - Financial Disclosure - Conflicts of Interest is added to cover potential conflicts of interest of EPA employees and members of the National Commission on Air Quality. All such persons must report annually any known financial interest in any person subject to the Act or who applies for or receives financial assistance under the Act. The Commission membership must be equitably distributed and no more than one-third of the non-congressional members may be associated with persons subject to the Act. Each EPA employee is prohibited from having financial interests which would conflict with the official duties of the employee, and the Administrator is to issue regulations specifying what types of financial interests would conflict with certain categories of positions. Persons who have any official or contractual relationship to organizations party to litigation on air quality matters; or who lobby, educate or provide information on air quality matters could not be employees of EPA.

Section 319 - Air Quality Monitoring is added to specify that EPA shall promulgate regulations establishing a standard air quality index for monitoring and reporting of air quality data by State and local governments. It also requires the Administrator to supplement State and local monitoring stations with Federal stations where necessary.

Section 320 - Standardized Air Quality Modeling is added to provide for periodic (minimum, every three years) conferences on air quality modeling, with the first by February 7, 1978. The conferences are to include an appropriate technical staff of Federal, State, and local agencies.

Sections 321-322 - Employment Effects - Employee Protection are added to authorize EPA to conduct evaluations of plant closings and employment losses alledgedly resulting from administration or enforcement of the Act. An employee or representative of an employee threatened with or adversely affected because of the Act, including from State or local requirements, may request EPA to conduct a full investigation, including subpoena and contempt authority. No authority is given to modify or withdraw any requirement. Also employees who are fired or discriminated against because they have testified or brought suit under the Act may apply to the Seceretary of Labor to review the case; the Seceretary can order reinstatement and may order compensatory damages.

Section 323 - National Commission on Air Quality is added to establish a National Commission, comparable to those created for water quality and transportation, to study air quality. The Commission shall be composed of eleven members. The President is to appoint seven public members.

Sections 324-325 - Vapor Recovery are added to require that the cost of vapor recovery equipment is to be borne by the retailer, who may pass it on to the consumer. No station which is owned by an independent marketer and which has a monthly throughput of less than 50,000 gallons may be required by EPA to install vapor recovery equipment, but State and local governments may so require. A three-year phase-in for independent marketers with stations with greater than 50,000 gallons per month throughput is provided, but State and local governments can require earlier effectiveness.

Section 325 - Appropriations is added to provide for:

1. Seventy five million annually for transportation-related planning.
2. Four million annually for the public notification grants to States.
3. Two hundred million annually for all other functions through fiscal year 1978-81.
4. One hundred fifty seven million for fiscal year 1978 to EPA for studies and reports.
5. One hundred twenty million for research, development and demonstration, for fiscal year 1978.
6. Seven and one-half million for training through fiscal year 1981.

Title IV

Section 401 - Basis of Administrative Standards amends Section 108 to establish as the basis for regulation emissions which in the Administrator's judgment "cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare."

Section 402 - Interagency Cooperation on Prevention of Environmental Cancer, Heart and Lung Disease is added to require an interagency task force to be established within three months of enactment under EPA lead to include EPA; the National Cancer Institute; the National Heart, Lung and Blood Institute; the National Institute of Occupational Safety and Health; and the National Institute on Environmental Sciences.

Section 403 - Studies is added to specify the following study requirements:

1. The Administrator is required to study and report to Congress within eighteen months on the health hazards and means of controlling fine particulates. The National Academy of Sciences shall also participate in this study.

2. The Administrator is required to conduct a study and report to Congress no later than January 1, 1979, on the public health and welfare effects of odorous emissions, their sources, and measures available to control such emissions.

3. The Administrator is required to publish a list of all known chemical contaminants resulting from environmental pollution which have been found in human tissue within twelve months after enactment. Within eighteen months, the Administrator shall publish an explanation of the origin of these chemicals. The Administrator shall also, if feasible, conduct an epidemiological study on the relationship between levels of chemicals in the environment and in human tissue.

4. The Administrator is required to make an analysis of the composition of fine particulate matter in the Gulf Coast Region and other areas and the contribution of such substances to visibility and public health problems.

5. EPA, the Department of Transportation, and the Federal Energy Administration are required to report annually on fuel economy in relationship to emission standards.

Section 404 - Railroad Emission Study is added to require the Administrator to conduct a study and report to Congress on the effect of pollutants emitted from railroad locomotives and rolling stock on air quality and the current state of technology for controlling such emissions.

Section 405 - Report Concerning Economic Approaches to Controlling Air Pollution is added to require the Administrator and the Council of Economic Advisors to jointly define and evaluate economic measures which can provide an incentive to greater control of air pollution. This report must be submitted to Congress not later than two years after enactment. Within one year after enactment, the Administrator must study and report to Congress on the efficacy and feasibility of establishing a system of penalties for stationary sources on NO_x emissions.

Section 406 - Effective Dates is added to specify that, except as otherwise expressly provided, all States must submit required SIP revisions within one year after enactment or nine months after the promulgation of necessary technical guidance by EPA.

Memorandum, "Criteria for Approval of 1979 SIP Revisions"

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND WASTE MANAGEMENT

FEB 24 1978

SUBJECT: Criteria for Approval of 1979 SIP Revisions

FROM: The Administrator (A-100)

TO: Regional Administrators, I-X

The attachment to this memo summarizes the elements which a 1979 State Implementation Plan (SIP) revision for a non-attainment area must contain in order to be approved by EPA as meeting the requirements of Part D of the Clean Air Act.

In summary, the Act requires the demonstration of attainment of the air quality standards (primary and secondary) as expeditiously as practicable, but in the case of national primary standards not later than December 31, 1982. However, for carbon monoxide (CO) and oxidants (Ox), if the State can demonstrate attainment is not possible by 1982 despite the implementation of all reasonable stationary source and transportation control measures, the Act provides for up to a five-year extension. In those cases the plan revisions must demonstrate attainment as expeditiously as practicable but no later than December 31, 1987. The extension is not automatic; a demonstration of need must be made and the State must fulfill the other statutory requirements.

It is the intent of the Agency to establish reasonable and achievable goals for SIP submissions and to take a firm posture on the imposition of sanctions where the reasonable goals are not achieved. Accordingly, while the policy requires a commitment to many specific strategies in the 1979 submissions (e.g., RACT on stationary sources, inspection/maintenance programs where attainment for carbon monoxide or oxidants extends beyond 1982, other reasonable transportation control measures, etc.) the memo also requires (for carbon monoxide and oxidants) a commitment to a continuing process. This process must be one which extensively involves the public as well as State and local elected officials and which ambitiously pursues a wide range of alternatives.

Since reliance on stationary controls and Federal new car standards alone will not enable most areas with oxidant and carbon monoxide problems to attain these standards by 1982, each Regional Office will need to put particular emphasis on additional measures to reduce transportation system emissions. The process committed to in the 1979 plan submission must lead to the expeditious selection and implementation of comprehensive transportation control measures. In judging the adequacy of the 1979 plan submission for the transportation sector, each Regional Administrator should ensure that ambitious alternatives (as described in the draft "Transportation Planning Guidelines" which have been circulated) will be analyzed.

The Department of Transportation (DOT), Housing and Urban Development (HUD) and EPA are seeking to integrate the transportation/air quality planning and implementation required by the Clean Air Act into existing planning and programming procedures. The air planning activities should be included in the Unified Work Program required by DOT and the adopted transportation measures should be included in the Transportation Improvement Program required by DOT. In complying with the Clean Air Act requirements, the Regions should also keep in mind the requirements of the HUD-EPA Agreement which provides for coordination of air quality planning and planning assisted under the HUD Comprehensive Planning Assistance (701) Program. Integration of air and transportation planning with comprehensive planning which incorporates growth management concerns should improve the effectiveness of air quality planning and could reduce the need for enforcement measures in the future.

States will be provided some discretion regarding the amount of emissions growth to be accommodated within the SIP. EPA generally will not question the growth rates desired by the State so long as reasonable further progress is demonstrated and there is a demonstration of attainment by the statutory deadline (1982 or 1987). However, the growth rate identified in the SIP must be consistent with growth rates used (or implied by) other planning programs in the area (e.g., FWPCA §208, 201, HUD §701, FHWA §134).

You should note that there are other SIP revisions which are not discussed in the attachment but which are required by the 1977 Amendments. These include:

1. Section 128 (relating to State boards)
2. Section 126 (relating to interstate pollution)
3. Section 127 (relating to public notification)
4. Part C (relating to prevention of significant deterioration)
5. Section 110(a)(2)(K) (relating to permit fees)
6. Section 123 (relating to stack heights for existing source in other than non-attainment areas)
7. Section 121 (relating to consultation)

Although incorporation of these provisions is required by the law, failure to achieve final approval by July 1, 1979 does not trigger the new source prohibition of Section 110(a)(2)(I).

It is important to emphasize to the States that all current SIP requirements remain in effect despite the development of the 1979 revisions. Any suspension or discontinuance of an existing SIP provision must be submitted for EPA approval. This should be done as part of the revision submitted in January 1979. Exceptions to this procedure may be found in certain new provisions of §110 relating to reduction of on-street parking, bridge tolls, and other measures.

The development of the January 1979 SIPs to meet the minimum requirements of the Clean Air Act Amendments of 1977 is a complex and demanding program. It will require the commitment of significant resources on the part of the air programs staff of the Regional Office to ensure that the States develop and submit a comprehensive and approvable plan. We are working with your staff to develop the necessary guidance and follow-up programs which will assist your office and the State to carry out this very difficult but important part of the overall air program.

Attachment

cc: Air & Hazardous Division Directors
Air Branch Chiefs

Criteria for Approval of 1979 State Implementation Plan Revisions for Non-Attainment Areas

Purpose

The purpose of this document is to define the criteria by which State Implementation Plan (SIP) revisions for non-attainment areas required by the Clean Air Act Amendments of 1977 (the Act) will be approved. These revisions are to be submitted to EPA by January 1, 1979.

Categories of SIP Revisions

SIP revisions submitted by January 1, 1979 can be divided into two categories:

1. Those which provide for attainment of the Primary Ambient Air Quality Standards (primary standards) for all criteria pollutants on or before December 31, 1982.

2. Those which provide for attainment of the primary standards for sulfur dioxide, nitrogen oxides, and particulate matter on or before December 31, 1982 but show that despite the implementation of all reasonable transportation and stationary source emission control measures attainment of the primary standards for carbon monoxide and/or oxidants cannot be achieved until after this date. In these cases, the revisions must demonstrate attainment as expeditiously as practicable but no later than December 31, 1987.

In order for an adequate SIP revision to fall into the second category, the State has an affirmative responsibility to demonstrate to the satisfaction of EPA that attainment of the primary carbon monoxide and/or oxidants standards is not possible in an area prior to December 31, 1982.

It should be noted that SIP revisions of either category should also provide for attainment of Secondary Ambient Air Quality Standards (secondary standards) as expeditiously as practicable although there is no specific deadline contained in the Act.

General Requirements of All 1979 SIP Revisions

Each 1979 SIP revision must contain the following:

1. A definition of the geographic areas for which control strategies have been or will be developed. Consideration should be given to the practical benefits of defining areas which correspond whenever possible to those substate districts established pursuant to Part IV, Attachment A of OMB Circular No. A-95.

2. An accurate, comprehensive, and current (1977 calendar year) inventory of existing emissions.

3. A determination of the level of control needed to demonstrate attainment by 1982 (including growth). This demonstration should be made by the application of modeling techniques as set forth in EPA's Guideline on Air Quality Models. For oxidants, any legitimate modeling technique (e.g., those referenced in "Use, Limitation and Technical Basis of Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors." EPA 450/2-77-021a. November 1977) can be used. Consideration of background and transport for oxidants should generally be in accordance with the procedures documented in "Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors." In developing photochemical oxidant control strategies for a particular area, states may assume at a minimum that the standard will be attained in adjacent states.

If a state can demonstrate that the level of control necessary for attainment of the primary standards for carbon monoxide and/or oxidant is not possible by 1982 despite the application of all reasonable measures, an extension past 1982 (but not beyond 1987) is authorized.

4. Adoption in legally enforceable form[1] of all measures necessary to provide for attainment by the prescribed date or, where adoption of all such measures by 1979 is not possible, (e.g., certain transportation control measures, and certain measures to control the oxides of nitrogen and total suspended particulate) a schedule for expeditious development, adoption, submittal, and implementation of these measures. The situations in which adoption of measures may be scheduled after 1979 are discussed in the pollutant specific sections of this document. Each schedule must provide for implementation of all reasonably available control measures as expeditiously as practicable. During the period prior to attainment, these measures must be implemented rapidly enough to provide at a minimum for reasonable further progress (see discussion

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[1] Written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan. The relevant organizations shall provide evidence that the legally enforceable attainment measures and the "criteria, standards and implementing procedures necessary for effectively guiding and controlling major decisions as to where growth shall and shall not take place," prepared by State and local governments in compliance with Section 701 of the Housing Act of 1954, as amended, are fully coordinated in the attainment and maintenance of the NAAQS.

below). Each schedule will be considered part of the applicable implementation plan and thus will represent a commitment on the part of the State to meet the key milestones set forth in the submitted schedule.

5. Emission reduction estimates for each adopted or scheduled control measure or for related groups of control measures where estimates for individual measures are impractical. It is recognized that reduction estimates may change as measures are more fully analyzed and implemented. As such estimates change, appropriate responses will be required to insure that the plan remains adequate to provide for attainment and for reasonable further progress.

6. Provision for reasonable further progress toward attainment of the primary and secondary standards in the period prior to the prescribed date for attainment. Reasonable further progress is defined as annual incremental reductions in total emissions (emissions from new as well as existing sources) to provide for attainment by the prescribed date. The plan shall provide for substantial reductions in the early years with regular reductions thereafter.

Reasonable further progress will be determined for each area by dividing the total emission reductions required to attain the applicable standard by the number of years between 1979 and the date projected for attainment (not later than 1987). This is represented graphically by a straight line drawn from the emissions inventory submitted in 1979 to the allowable emissions on the attainment date. However, EPA recognizes that some measures cannot result in immediate emission reduction. Therefore, if a State can show that some lag in emissions reduction is necessary, a SIP will be acceptable even though reductions sufficient to produce decreases at the "straight-line rate" are not achieved for a year or two after 1979. This lag in achieving the "straight-line rate" for emissions reduction is to be accepted only to accommodate the time required for compliance with the first set of regulations adopted on or before January 1, 1979, if immediate compliance is not possible. It does not authorize delays in adoption of control requirements.

The requirement to demonstrate reasonable further progress will, in most areas designated non-attainment for oxidant or carbon monoxide, necessitate a continuous, phased implementation of transportation control measures. In areas where attainment of all primary ambient standards by 1982 is not possible EPA will not accept mere reliance on the Federal Motor Vehicle Control Program by itself as a demonstration of reasonable further progress.

In determining "reasonable further progress", those emission reductions obtained from compliance between August 7, 1977, and December 31, 1979, with (1) SIP revisions that have been submitted after August 7, 1977, and (2) regulations which were approved by the Agency prior to the enactment of the 1977 Clean Air Amendments, can be treated as having been achieved during 1979. There should be an assurance, however, that these are real emission reductions and not just "paper" ones.

7. An identification and quantification of an emissions growth increment which will be allowed to result from the construction and operation of major new or modified stationary sources within the area for which the plan has been developed. Alternatively, an emissions offset regulation can be adopted to provide for major new source growth.

The growth rates established by states for mobile sources and new minor stationary sources should also be specified, and in combination with the growth associated with major new or modified stationary sources will be accepted so long as they do not jeopardize the reasonable further progress test and attainment by the prescribed date. However, the growth rate identified in the SIP must be consistent with the growth rates used (or implied by) the other planning programs in the area (e.g., FWPCA Section 208 [201], HUD Section 701, FHWA Section 134). A system for monitoring the emission growth rates from major and minor new stationary sources and from transportation sources and assuring that they do not exceed the specified amounts must also be provided for in the revision.

8. Provision for annual reporting on the progress toward meeting the schedules summarized in (4) above as well as growth of mobile sources, minor new stationary sources, major new or modified stationary sources, and reduction in emissions from existing sources to provide for reasonable further progress as in (6) above. This should include an updated emission inventory.

9. A requirement that permits be issued for the construction and operation of new or modified major sources in accordance with Section 173 and 110(a)(2)(D).

10. An identification of and commitment to the financial and manpower resources necessary to carry out the plan. The commitment should be made at the highest executive level having responsiblity for SIP or that portion of it and having authority to hire new employees. This commitment should include written evidence that the State, the general purpose local government or governments, and all state, local or regional agencies have included appropriate provision in their respective budgets and intend to continue to do so in future years for which budgets have not yet been finalized, to the extent necessary.

11. Evidence of public, local government, and state legislative involvement and consultation. It shall also include an identification and brief analysis of the air quality, health, welfare, economic, energy, and social effects of the plan revisions and of the alternatives considered by the State, and a summary of the public comment on such analysis.

12. Evidence that the SIP was adopted by the state after reasonable notice and public hearing.

Additional Requirements for Carbon Monoxide and Oxidant SIP Revisions which Provide for Attainment of the Primary Standards Later than 1982

For those SIP revisions which demonstrate that attainment of the primary standards for carbon monoxide and/or oxidants is not possible in an area prior to December 31, 1982 despite the implementation of all reasonable emission control measures the following items must be included in the January 1, 1979 submission in addition to all the general requirements listed above:

1. A program which requires prior to issuance of any permit for construction or modification of a major emitting facility an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that benefits of the proposed source significantly outweigh the environmental and social cost imposed as a result of its location, construction, or modification.

2. An inspection/maintenance program or a schedule endorsed by and committed to by the Governor for the development, adoption, and implementation of such a program as expeditiously as practicable. Where the necessary legal authority does not currently exist, it must be obtained by June 30, 1979. Limited exceptions to the requirement to obtain legal authority by June 30, 1979 may be possible if the state can demonstrate that (a) there was insufficient opportunity to conduct necessary technical analyses and/or (b) the legislature has had no opportunity to consider any necessary enabling legislation for inspection/maintenance between enactment of the 1977 Amendements to the Act and June 30, 1979. In addition, where a legislature has adequate opportunity to adopt enabling legislation before January 1, 1979, the Regional Administrator should require submission of such legal authority by January 1, 1979. In no case can the schedule submitted provide for obtaining legal authority later than July 1, 1980.

Actual implementation of the inspection/maintenance program must proceed as expeditiously as practicable. EPA considers two and one half years from the time of legislative adoption to be the maximum time required to implement a centralized inspection/maintenance program and one and one half years to implement a decentralized program. In no case may implementation of the program, i.e., mandatory inspection and mandatory repair of failed vehicles be delayed beyond 1982 in the case of a centralized program (either state lanes or contractor lanes) or beyond 1981 in the case of a decentralized (private garage) system.

3. A commitment by the responsible government official or officials to establish, expand, or improve public transportation measures to meet basic transportation needs as expeditiously as is practicable.

4. A commitment to use insofar as is necessary Federal grants, state or local funds, or any combination of such grants and funds as may be consistent with the terms of the legislation providing such grants and funds, for the purpose of establishing, expanding or improving public transportation measures to meet basic transportation needs.

Note that HUD has prepared guidelines for local development codes and ordinances to provide special requirements for areas which for significant periods of time may exceed the primary standards. These guidelines specify criteria for new construction operation of buildings which minimize pollutant concentrations to ensure a healthy indoor and outdoor environment. States are encouraged to adopt such measures as part of the SIP.

Pollutant Specific Requirements

Sulfur Dioxide

Specifically, with regard to item (4) of the General Requirements, the January 1979 plan revisions dealing with sulfur dioxide must contain all the necessary emission limitations and legally enforceable procedures to provide for attainment by no later than December 31, 1982 (i.e., schedules for the development, adoption, and submittal of regulations will not be acceptable).

Nitrogen Oxides

For NO_x, the January 1979 plan must contain all the necessary emission limitations and the legally enforceable procedures, or as a minimum, the appropriate schedules to adopt and submit the emission limitations and legally enforceable procedures which provide for implementation so that standards will be attained by no later than December 31, 1982. EPA is currently evaluating the need for a short term NO_2 standard and expects to promulgate such a standard during 1978. If such a standard for air quality is promulgated, a new and separate SIP revision will be required for this pollutant.

Particulate Matter

The January 1979 plan revisions dealing with particulate matter must contain all the necessary emission limitations and legally enforceable procedures for traditional sources. These emission limitations and enforceable procedures must provide for the control of fugitive emissions, where necessary, as well as stack emissions from these stationary sources. Where control of non-traditional sources (e.g., urban fugitive dust, resuspension, construction, etc.) is necessary for attainment, the plan shall contain an assessment of the impact of these sources and a commitment on the part of the state to adopt appropriate control measures. This commitment shall take the form of a schedule to develop, submit, and implement the legally enforceable procedures, and programs for controlling non-traditional particulate matter sources. These schedules must include milestones for evaluating progress and provide for attainment of the primary standards by no later than December 31, 1982, and attainment of the secondary standards as expeditiously as practicable. States should initiate the necessary studies and demonstration projects for controlling the non-traditional sources as soon as possible.

Carbon Monoxide and Oxidant

An adequate SIP for oxidant is one which provides for sufficient control of volatile organic compounds (VOC) from stationary and mobile sources to provide for attainment of the oxidant standard. Accordingly, the 1979 plan revision must set forth the necessary emission limitations and schedules to obtain sufficient control of VOC emissions in all non-attainment areas. They must be directed toward reducing the peak concentrations within the major urbanized areas to demonstrate attainment as expeditiously as practicable but in no case later than December 31, 1987. This should also solve the rural oxidant problem by minimizing VOC emissions and more importantly oxidants that may be transported from urban to rural areas. The 1979 submission must represent a comprehensive strategy or plan for each non-attainment area; plan submissions that address only selected portions of non-attainment are not adequate.

For the purpose of oxidant plan development, major urban areas are those with an urbanized population of 200,000 or greater (U.S. Bureau of Census, 1970). A certain degree of flexibility will be allowed in defining the specific boundaries of the urban area. However, the areas must be large enough to cover the entire urbanized[2] area and adjacent fringe areas of development. For non-attainment urban areas, the highest pollutant concentration for the entire area must be used in determining the necessary level of control. Additionally, uniform modeling techniques must be used throughout the non-attainment urban area. These requirements apply to interstate as well as intrastate areas.

Adequate plans must provide for the adoption of reasonably available control measures for stationary and mobile sources.

For stationary sources, the 1979 oxidant plan submissions for major urban areas must include, as a minimum, legally enforceable regulations to reflect the application of reasonably available control technology (RACT)[3] to those stationary sources for which EPA has published a Control Techniques Guideline (CTG) by January 1978, and provide for the adoption and submittal of additional legally enforceable RACT regulations on an annual basis beginning in January 1980, for those CTGs that have been published by January of the preceeding year.

For rural non-attainment areas, the Ox plan must provide the necessary legally enforceable procedures for the control of large HC sources (more than 100 ton/year potential emissions) for which EPA has issued a CTG by January 1978, and to adopt and submit additional legally enforceable procedures on an annual basis beginning in January 1980, after publication of subsequent CTGs as set forth above.

For mobile sources in urbanized area (population 200,000) SIPs must provide for expeditious implementation of reasonably available control measures. Each of the measures for which EPA will publish information documents during 1978 is a reasonably available control measure. These measures are listed on the following page:

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[2] As defined by the U.S. Bureau of Census, urbanized area generally include core cities plus any closely settled suburban areas.

[3] While it is recognized that RACT will be determined on a case-by-case basis, the criteria for SIP approval rely heavily upon the information contained in the CTG. Deviations from the use of the CTG must be adequately documented.

1. To be published by February 1978

   a. inspection/maintenance
   b. vapor recovery
   c. improved public transit
   d. exclusive bus and carpool lanes
   e. area wide carpool programs

2. To be published by August 1978

   a. private car restrictions
   b. long range transit improvements
   c. on street parking controls
   d. park and ride and fringe parking lots
   e. pedestrian malls
   f. employer programs to encourage car and van pooling, mass transit, bicycling and walking
   g. bicycle lanes and storage facilities
   h. staggered work hours
   i. road pricing to discourage single occupancy auto trips
   j. controls on extended vehicle idling
   k. traffic flow improvements
   l. alternative fuels or engines and other fleet vehicle controls
   m. other than light duty vehicle retrofit
   n. extreme cold start emission reduction programs

The above measures (either individually or combined into packages of measures) should be analyzed promptly and thoroughly and scheduled for expeditious implementation. EPA recognizes that not all analyses of every measure can be completed by January 1979 and, where necessary, schedules may provide for the completion of analyses after January 1, 1979 as discussed below. (If analysis after January 1979 demonstrates that certain measures would be unnecessary or ineffective, a decision not to implement such measures may be justifiable. However, decisions not to implement measures will have to be carefully reviewed to avoid broad rejections of measures based on conclusory assertions of infeasibility.)

As described previously, annual incremental reductions in total emissions must occur in order to achieve reasonable further progress during the period prior to attainment of the standards. Therefore, not all transportation measure implementation activities should wait until the comprehensive analyses of control measures are completed. Demonstration studies are important and should accompany or precede full scale implementation of the comprehensive strategy. It is EPA's policy that each area will be required to schedule a representative selection of reasonable transportation measures (as listed above) for implementation at least on a pilot or demonstration basis prior to the end of 1980.

Every effort must be made to integrate the air quality related transportation plan and implementation required by the Clean Air Act into planning and programming procedures administered by DOT. EPA will publish "Transportation Planning Guidelines" which will, if followed carefully, insure that an adequate transportation planning process exists.

EPA recognizes that the planning and implementation of very extensive air quality related transportation measures can be a complicated and lengthy process, and in areas with severe carbon monoxide or oxidant problems, completion of some of the adopted measures may extend beyond 1982. Implementation of even these very extensive transportation measures, however, must be initiated before December 31, 1982.

.In the case of plan revisions that make the requisite showing to justify an extension of the date for attainment, the portion of the 1979 plan submittal for transportation measures must:

1. Contain procedures and criteria adopted into the SIP by which it can be determined whether the outputs of the DOT Transportation planning process conform to the SIP.

2. Provide for the expeditious implementation of currently planned reasonable transportation control measures. This includes reasonable but unimplemented transportation measures in existing SIPs and transportation controls with demonstrable air quality benefits developed as part of the transportation process funded by DOT.

3. Present a program for evaluating a range of alternative packages of transportation options that includes, as a minimum, those measures listed above for which EPA will develop information documents. The analyses must identify a package of transportation control measures to attain the emission reduction target ascribed to it in the SIP.

4. Provide for the evaluation of long range (post-1982) transportation and growth policies. Alternative growth policies and/or development patterns must be examined to determine the potential for modifying total travel demand. One of the growth alternatives evaluated should be that prepared in response to Section 701 of the Housing Act of 1954, as amended.

5. Include a schedule for analysis and adoption of transportation control measures as expeditiously as practicable. The comprehensive analysis of alternatives (item 2 above) must be completed by July 1980 unless the designated planning agency can demonstrate that analysis of individual components (e.g., long range transit improvements) may require additional time. Adopted measures must be implemented as expeditiously as practicable and on a continuous schedule that demonstrates reasonable further progress from 1979 to the attainment date. Determinations of the reasonableness of a schedule will be based on the nature of the existing or planned transportation system and the complexity of implementation of an individual measure.

Additional Carbon Monoxide and Oxidant Monitoring Requirements

It is EPA's policy to require that all SIPs which provide for attainment of the oxidant standard after December 31, 1982, must contain commitments to implement a complete oxidant monitoring program in major urbanized areas in order to adequately characterize the nature and extent of the problem and to measure the effectiveness of the control strategy for oxidants. The 1979 plan submittal must provide for a schedule to conduct such CO monitoring as necessary to correct any deficiencies as identified by the Regional Office.

SIPs for Unclassified Areas Redesignated Non-Attainment

With respect to unclassified areas which are later found to be non-attainment areas the state will be required to submit a plan within nine months of the non-attainment determination. During plan development, the state will be required to implement the offset policy for that area. However, it should be noted that in many cases, because of previous plan revisions or adoption of previous control regulations, the baseline for offsets will be more restrictive and thus offsets may be more difficult to obtain. For oxidants, state-wide regulatory development (for at least all sources greater than 100 tons/year), however, would permit the state to utilize the regulations developed for the entire state as the applicable plan for the newly designated non-attainment area. This would normally constitute an approvable SIP per the above criteria and could essentially accommodate the proposed growth within the previously submitted state plan and not require offsets once the area is designated as non-attainment.